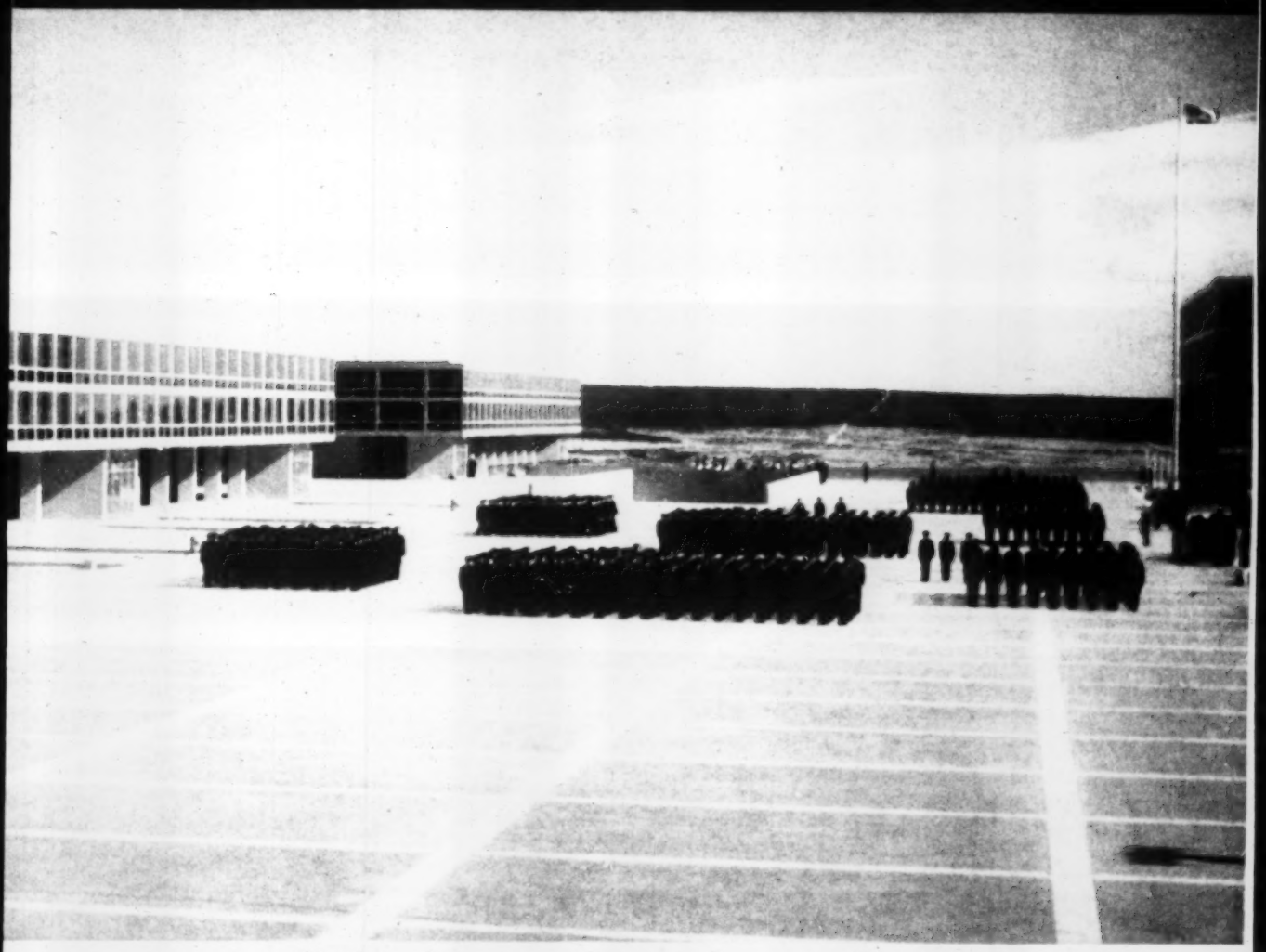
ENGINEERING NEWS-RECORD



Air Academy: no ivy on these walls p.36

STEVENS HICG
UNIVERSITY MICRO
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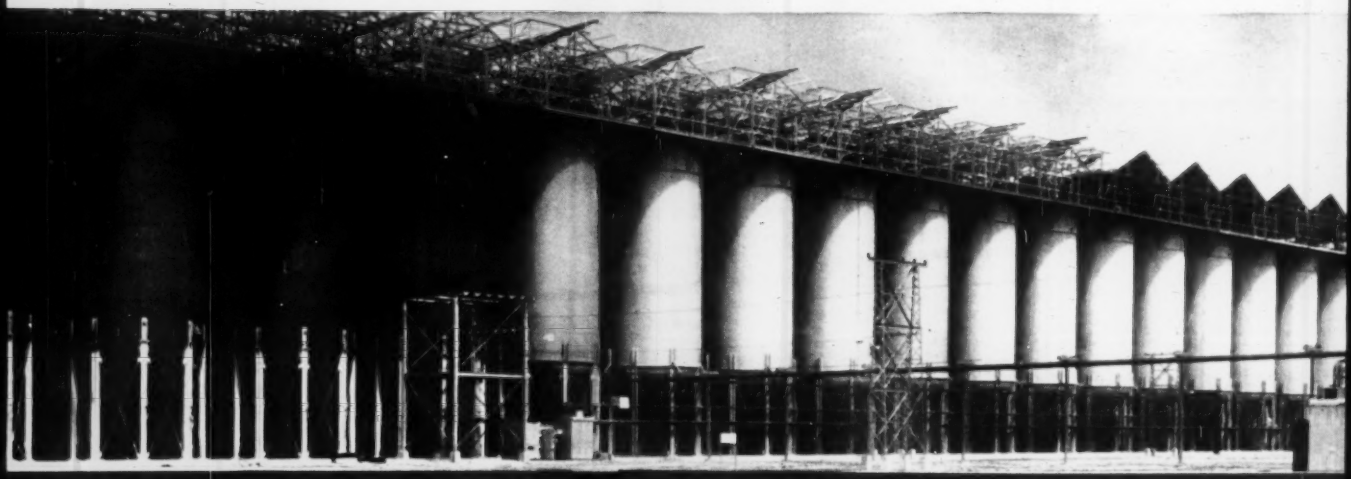
A McGRAW-HILL PUBLICATION

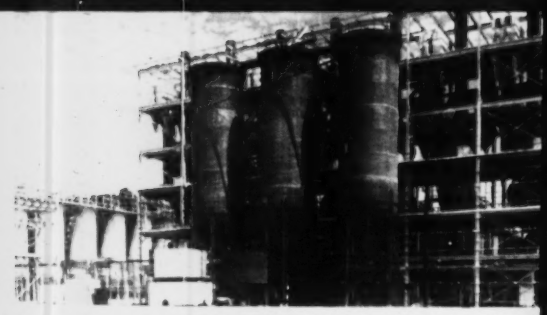
scope IN PLATE CONSTRUCTION

FOR ALCOA

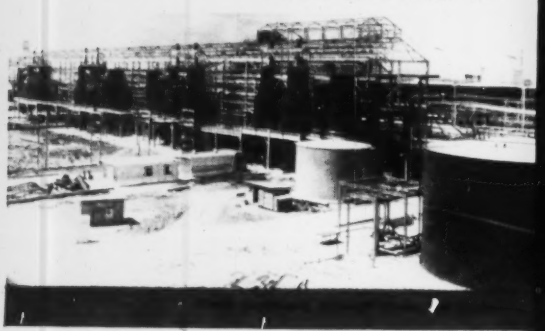
AT POINT COMFORT, TEXAS

BY Pittsburgh-Des Moines

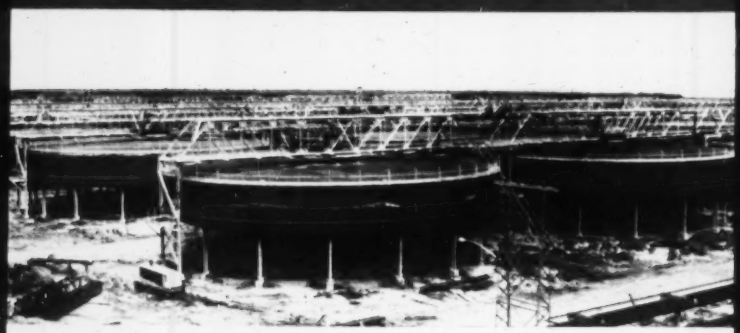




Elevated hydrate storage tanks



295 process and storage structures, together with structural housings, totalling approximately 23,000 tons of steel. This project, completed recently by PDM for Aluminum Company of America at Point Comfort, Texas, is yet another impressive indication of PDM's ability to engineer, fabricate and erect the big jobs in steel. 7 fabricating plants to serve you. Consultations promptly arranged. Write.



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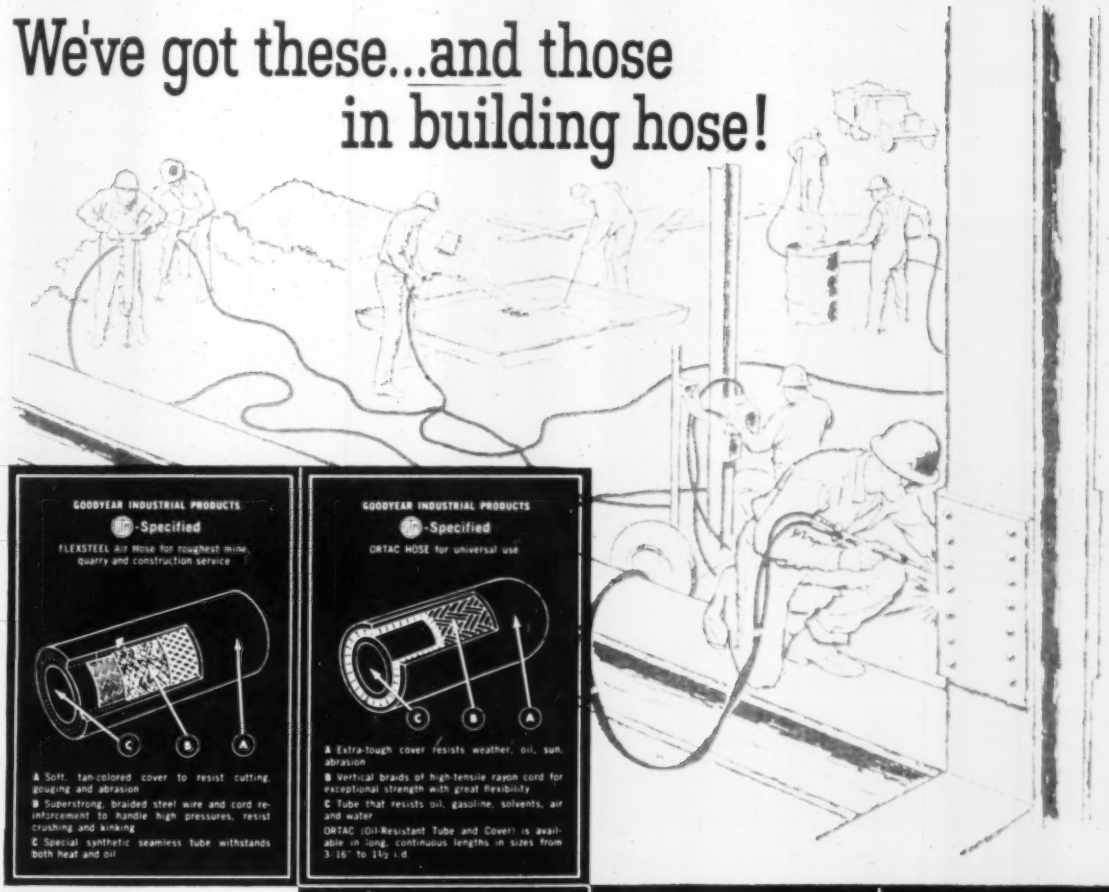
We've got these...and those in building hose!



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GY-Specified

FLEXSTEEL Air Hose for roughest mine, quarry and construction service

A Soft, tan-colored cover to resist cutting, gouging and abrasion

B Superstrong, braided steel wire and cord reinforcement to handle high pressures, resist crushing and kinking

C Special synthetic seamless tube withstands both heat and oil

GOODYEAR INDUSTRIAL PRODUCTS

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ORTAC HOSE for universal use

A Extra-tough cover resists weather, oil, sun, abrasion

B Vertical braids of high-tensile rayon cord for exceptional strength with great flexibility

C Tube that resists oil, gasoline, solvents, air and water

ORTAC (Oil-Resistant Tube and Cover) is available in long, continuous lengths in sizes from 5/16" to 1½ i.d.

GOODYEAR INDUSTRIAL PRODUCTS

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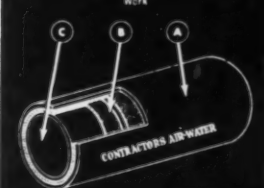

A Rugged cover that's both abrasion- and sun-resisting—continuously print-branded for easy identification

B Extra-tough braids of high-tensile rayon cord to handle pressures, resist crushing or kinking

C Special nonporous tube resists alkali or slightly acid water

GOODYEAR INDUSTRIAL PRODUCTS

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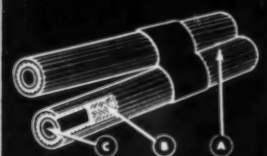
SPIRAFLEX Welding Hose for oxyacetylene welding, cutting, chipping



A Corrugated cover for firm grip and long wear—one line red, the other green for hook-up identification

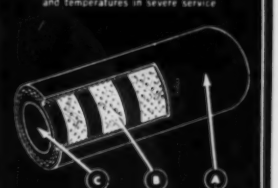
B Superstrong rayon braid reinforcement

C Nonporous, nonblooming, nonflaking tube

GOODYEAR INDUSTRIAL PRODUCTS

GY-Specified

FLEXSTEEL Steam Hose for high pressures and temperatures in severe service



A Extra-tough cover resists heat, aging and abrasion

B High-tensile braided steel wire reinforcements for maximum strength with flexibility

C Extremely heat-resistant tube

HIGH pressure or low—for air, water, steam, oil or gas—the smart choice in hose is Goodyear.

For Goodyear hose is built for builders: Its cover is super-tough to resist rough handling. It's heavily muscled with high-tensile cord or steel reinforcements. It resists kinking or crushing. Yet it's flexible and easy to maneuver.

Wouldn't it pay you, then, to insist on Goodyear quality on your next hose-using job? Check with your Goodyear Distributor for details on the special line that's designed to meet every contracting need. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.

IT'S SMART TO DO BUSINESS with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."

the big name in hose is

GOODYEAR

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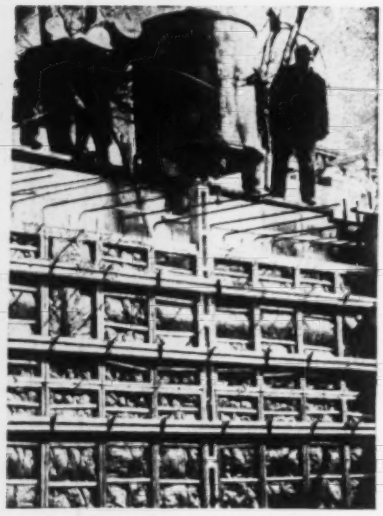
THE GREATEST NAME IN RUBBER

Insulated Forms

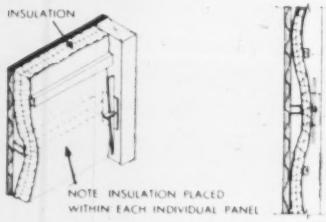


Symons Forms and Balsam Wool Insulation

Save 50% on Cost of Heating & Curing Concrete

C. R. Meyer & Sons Company, Oshkosh, Wisconsin posted this record 50% savings on the new $1,000,000 central office building of the Wisconsin Telephone Company at Oshkosh. Two-inch insulation in 24-inch widths was tacked to the forms. Walls were 12 inches thick and varied in height from 12 to 16 feet.

Pouring was started in January. Temperatures ranged from five to 25 degrees above zero. Concrete at time of pour was held in the 70 to 80-degree range. During one pour a



Cutaway section of form with insulation

tube was cast in the wall four feet from the top with a thermometer suspended in the bottom. After 24 hours, temperature at center of concrete rose to 105 degrees and after five days the concrete went back to 70.

Symons forms, shores and column clamps may be rented with purchase option. FREE literature on Symons' products is available upon request.

Symons

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EIGHTY-FIFTH YEAR OF PUBLICATION

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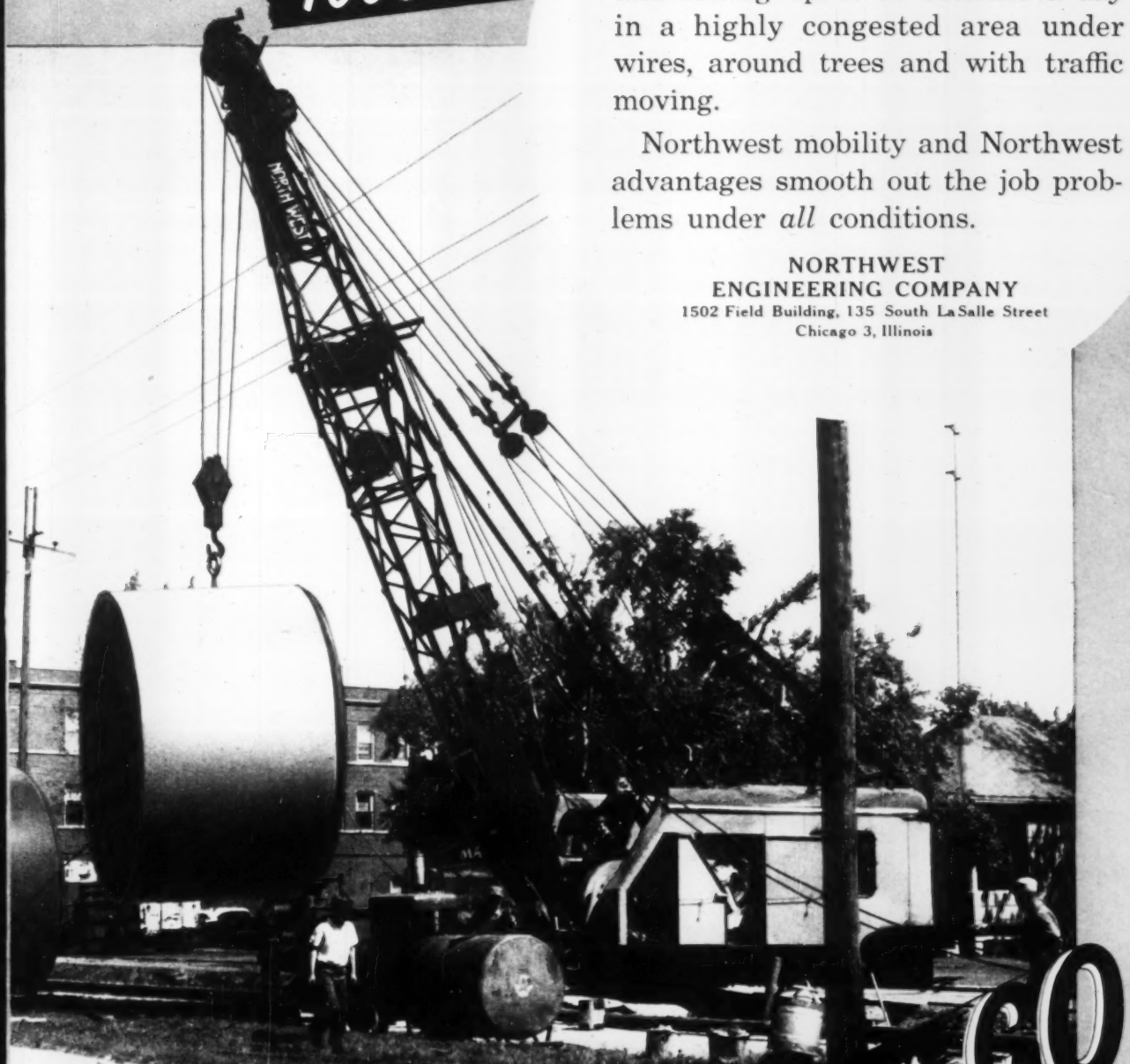

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Only with Link-Belt Speeder ***Full-Function*** *design . . .*

all these features in one shovel-crane

STANDARD FEATURES	LS-98	OTHER 1-YD. MACHINES* Rig A	Rig B	Rig C	Rig D
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• Hydraulic power steering	X				
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• Fully interchangeable, self adjusting clutches	X				
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• Reversing clutches for both main drums	X				
• Boom lowering clutch	X			X	X
• Third drum without restricting any other function	X			X	
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• Torque converters	X		X		X

*Ask your Link-Belt Speeder distributor for the facts behind this comparison.

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Practically double power train life

And that's why *Full-Function* design spreads wear over more clutches, shafts, gears and bearings. Only the power trains in use are under load!

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LINK-BELT SPEEDER

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longer, stronger AMVIT Jointed Clay Pipe prevents infiltration SIX WAYS

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Engineering standard and specifications for sanitary sewers are written so that both the contractor and the community can obtain the best type of construction.

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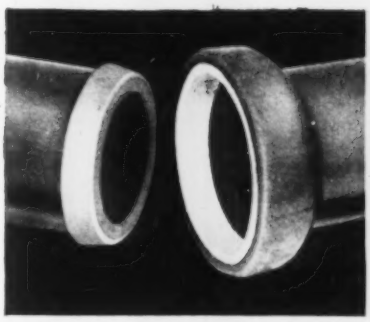

1. FACTORY-MADE QUALITY

The Amvit Joint is manufactured from plasticized resins of polyvinyl-chloride. No other combination of materials is used or needed. It is applied on the pipe by a special manufacturing process and delivered to the job site ready for immediate installation.

2. DESIGN PREVENTS LEAKS

The Amvit Joint is a compression type joint based on the ball and socket principle. The material on the spigot end is a convex shape, with the bell end in a concave shape. Simply pushing the pipe together "makes" the joint, keeping the surfaces of the bell and spigot rings in constant compression. Thus, infiltration, exfiltration, and root penetration are prevented.

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4. PERMITS DEFLECTION, ABSORBS SHOCKS

Amvit is made from a plastic which has many characteristics similar to rubber. It is pliable, permitting deflection without leakage. It is resilient, can absorb shocks, and vibration.

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The design of the joint assures that the pipe is self-centered at all times. This gives perfect alignment and self-cleansing action. Because the joint is really tight, no foreign matter such as dirt, sand, or stones can possibly enter the line.

6. COMPLETE FITTINGS

Amvit is furnished on all standard fittings, as well as pipe. This will permit a uniformly tight line from house to treatment plant.

Amvit Jointed Clay Pipe, in sizes 4" through 24", together with all fittings is available for immediate delivery in the Northeast and Central States.

For more information on how Amvit can help cut your sewer installation costs, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you, for this descriptive folder.

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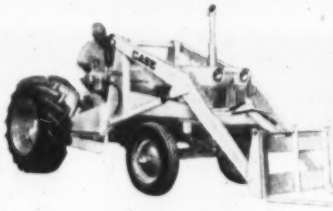
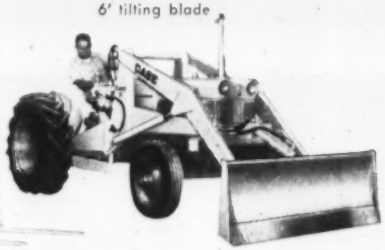
- Optional power-steer for easier all-day operation

BACKHOE
10′ dig depth, 180° swing

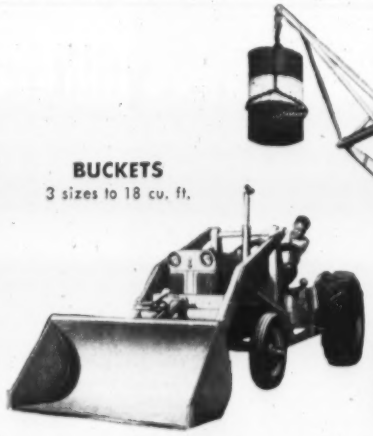
PALLET FORK
Adjustable tines



BULLDOZER
6′ tilting blade



BUCKETS
3 sizes to 18 cu. ft.



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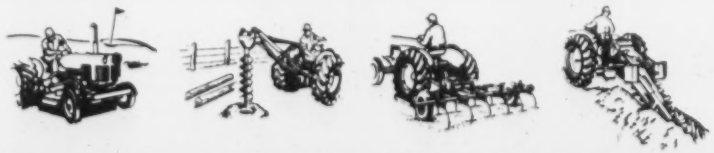

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WRITE FOR BULLETIN 1058

SEALMASTER

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Reader Comment

Another 'Imperial' Viewpoint

SIR:—First, let me state that I am certainly no protagonist of Frank Lloyd Wright. The old Imperial Hotel in Tokyo has always seemed to be an "architect's bad dream" to all the old "Japan hands." However, I believe that, in the interest of accurate news recording, your article, "Imperial Hotel Flooded as Typhoon Strikes Tokyo" (ENR Nov. 20, 1958, p. 48), should be corrected.

I was in Tokyo during the time of the recent typhoon and can assure you that exactly the reverse of your reporting was the case.

The old (or Frank Lloyd Wright) Imperial was flooded to a depth of approximately two feet in its basement arcade filled with souvenir shops. None of the living area and only one of the basement restaurants were affected by the water, which was two feet deep in the streets around the hotel; this all resulted from the overflowing of the moat around the Imperial Palace. (Editor's Note: This accords with ENR's story, which said the basement of the old Imperial was flooded.)

On the other hand, the new and very modern annexes of the Imperial were completely out of business. The water entered the main lobby at street level and flowed down the many steps and passageways into the numerous basements and sub-basements. (Editor's Note: ENR's story stated that the annex basement was flooded but did not contain the information that follows:) The electric switchgear, very poorly located at the very lowest level and very poorly protected from flooding, was immediately put out of service. All heating, ventilating, air conditioning, elevator and hot water services immediately ceased to function. The beautiful new dining room and ballroom with its attached Japanese indoor garden was inundated to a depth of 8 ft with the sewage that had backed up as a result of the shutoff of all pumps. All the eating facilities and a number of the lounges were flooded.

Electric service was not restored for several days and then only for limited areas. Elevator service was not restored for two days and then only at one elevator. There was not hot water for six days. All of this is in contrast to the rapid return to normal hotel service in the old Imperial.

The concluding statement of the article, "The annex suffered almost no water damage" is certainly in error.

CHARLES C. BONIN
Engineering Manager
Ebasco Services, Inc.
New York, N. Y.

Editor's Note—The concluding statement of the article was the appraisal of the situation given to ENR by the hotel manager. Obviously his yardstick of damage must have been different from that of Mr. Bonin, to whom we extend thanks for the additional details. Mr. Bonin expresses the belief that ENR was misled by the management to make the new annex look good. We can only hope not, and point to the possibility that the statement in the ENR article that the old hotel showed up "second best" could be true from the management's viewpoint, considering money damage alone, while Mr. Bonin's report would place the new annex second best from the viewpoint of guest discomfort during the flood.

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

For Your Calendar . . .

Mason Contractors Association of America, ninth annual convention and 1959 show, Chase-Park Plaza Hotel, St. Louis, Mo., Feb. 15-18.

National Ready Mixed Concrete Association, Roosevelt Hotel, New Orleans, La., Feb. 15-19.

National Society of Professional Engineers, Dinkler-Tutwiler Hotel, Birmingham, Ala., Feb. 18-21.

American Concrete Institute, Statler Hilton Hotel, Los Angeles, Calif., Feb. 22-26.

National Council for Stream Improvement, Waldorf-Astoria, Astor Gallery, New York City, Feb. 23-25.

Second Annual Building Congress on Urban Renewal, National Housing Center, Washington, D. C., Feb. 26.

National Lighting Exposition, Coliseum, New York City, Mar. 1-4.

32nd Highway Engineering Conference, University of Colorado, Boulder, Colo., Mar. 5-6.

American Society of Photogrammetry, Shoreham Hotel, Washington, D. C., Mar. 8-11.

American Railway Engineering Association, Sherman Hotel, Chicago, Ill., Mar. 9-11.

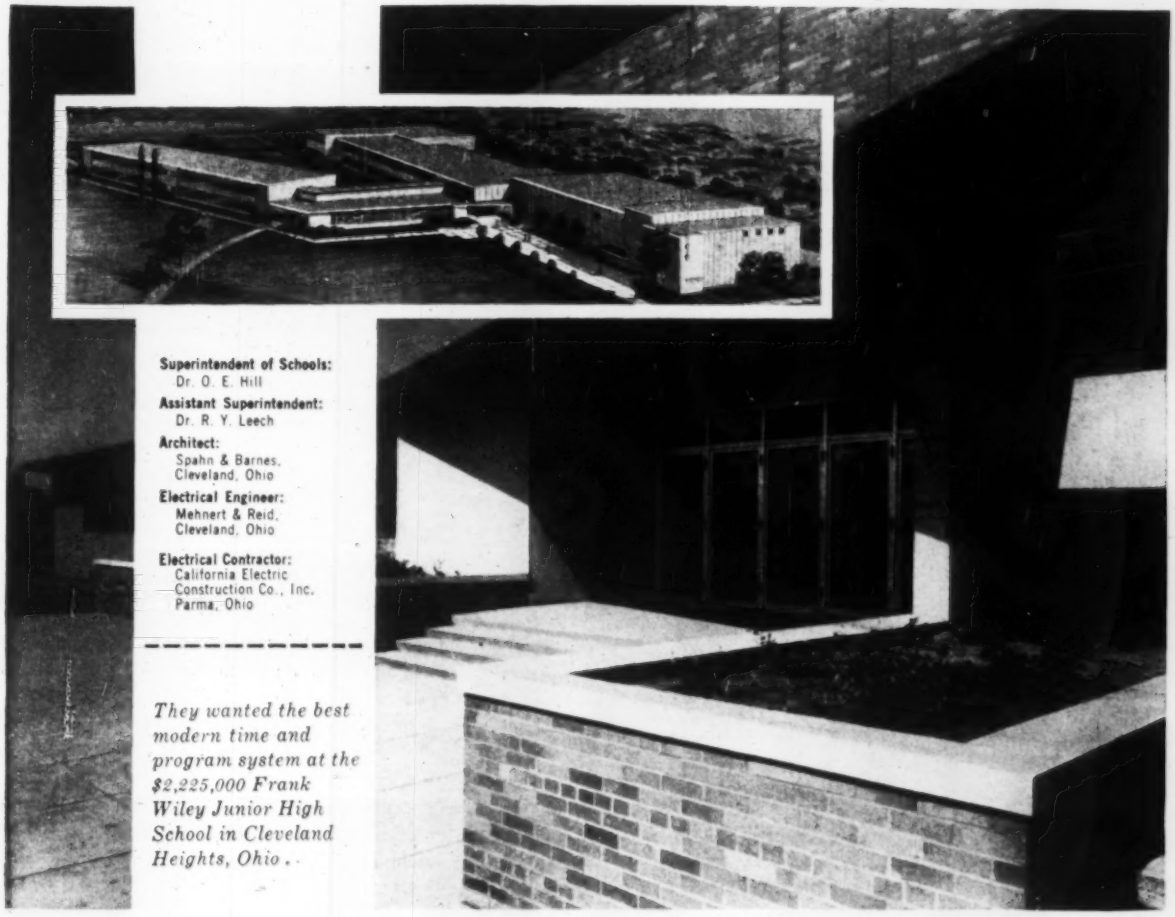
American Congress on Surveying and Mapping, Shoreham Hotel, Washington, D. C., Mar. 11-14.

9th Annual Iron and Steel Conference, Pick-Roosevelt Hotel, Pittsburgh, Pa., Mar. 11-12.

Mississippi Valley Conference of State Highway Departments, Annual Convention, Edgewater Beach Hotel, Chicago, Ill., Mar. 19-21.

21st Annual American Power Conference, Hotel Sherman, Chicago, Ill., Mar. 31-Apr. 2.

Southern Municipal and Industrial Waste Conference, University of North Carolina in Chapel Hill, Apr. 2-3.



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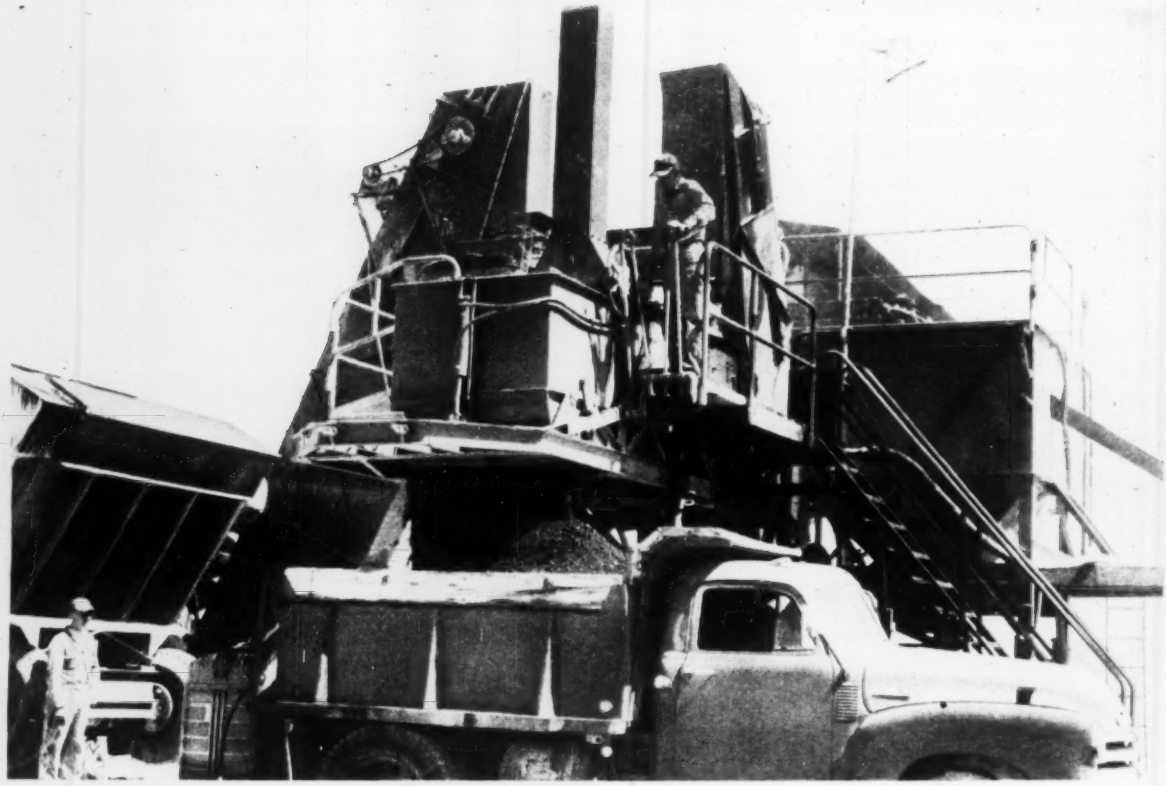

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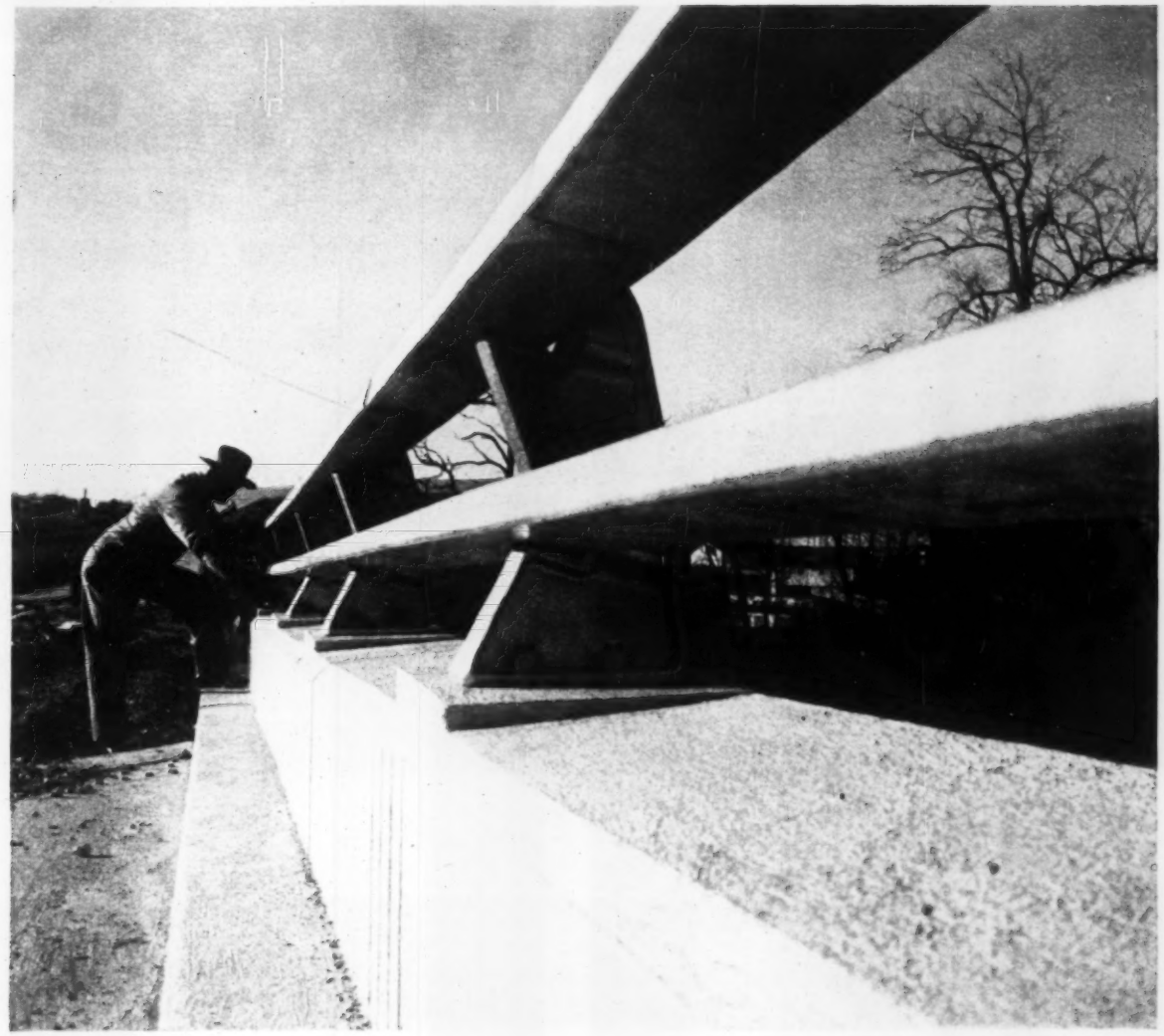

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The new rail is made in four styles: one- or two-rail models for mounting on a parapet, and three- or four-rail designs for a curb or sidewalk.

Rails are furnished in any length from 7 to 20 ft. They are 2 x 5 in. box channels cold-formed from ⅛-in. steel and galvanized in accordance with ASTM specification A-123. The galvanized posts are spaced on 9 ft 6 in. centers and connected to the parapet by four 1⅛ in. anchor bolts set in the concrete. The railing exceeds the requirements of the 1953 AASHO Specifications for railing loading. And when rails are damaged, they're easily replaced.

Get full details on this sturdy, handsome bridge rail, with "see-through" design. Just phone or write the nearest Bethlehem sales office.

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These three working pictures show TD-24's on the J. W. Briggs Construction Co. job — where the contractor is building 10.5 miles of new road to make way for Cougar Dam, under construction. The scenes are on a section being carved from basalt cliffs — where TD-24 operating safety and capacity *equals* the daily yardage of two king-sized clutch-steered crawlers!

ONLY PLANET POWERED "24's"

give operators confidence

ON DANGEROUS DOZING LIKE THIS!

As Operator J. D. Steelman (on U-dozer rig) puts it: "The TD-24 gives a feeling of security that sure helps when you are balancing on the narrow ledge of a sheer cliff, 300 feet above the river. The TD-24's steering system, plus excellent vision, good brakes, and all the power you need give confidence that results in high work output—even in the most dangerous conditions.

"TD-24's can push full blades, full time, and can steer without dropping their load."

With Planet Power steering (controlled with 2-finger ease) come multiple safety features that build production-boosting operator confidence. Decelerate instantly with the left foot...apply equal positive braking to both tracks with the single right foot pedal...or, pull back both planetary steering levers with one hand to provide a second braking system, hydraulically actuated. Also, Control Tower Vision lets you see ahead to avoid danger zones.

It takes two king-sized clutch-steered crawlers to equal one Planet Power-steered International TD-24—on this rough, tough mountain road-building job!

Planet Power steering gives your operator full time "live" power on both tracks. Keeps the payload on the move. Gives bonus-load follow-through while turning, even with rock. Eliminates load-spilling "dead-track drag." Equalizes track speed for full-bite benching.

Measure the amazing yardage increase Planet Power-steered TD-24's give you—when blading material around curves; benching a bank or highwall; overcoming the sidedraft of uncentered loads; uprooting or dislodging "anchored" stumps or boulders. See what the high reverse of 7.5 mph means in speeding the shuttle-dozing cycle. Prove TD-24 Hi-Lo power shifting advantages for any crawler job. See your International Construction Equipment Distributor for a demonstration!

Using Hi-Lo power shifting— putting the inside track in high range and the outside one in low range—permits this TD-24 operator to turn safely, and drop the load over the cliff—without spillage on the turn!

Two TD-24's of the 5-unit fleet on this job, dozing rock over the brink of a cliff, 350 feet above the McKenzie River, in Oregon. "Our TD-24's are the units that do most of the close-edge work," states J. D. Steelman, operator of the U-dozer rig.

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International Harvester Co., 180 North Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE: Crawler and Wheel Tractors . . . Self-Propelled Scrapers . . . and Bottom-Dump Wagons . . . Crawler and Rubber-Tired Loaders . . . Off-Highway Haulers . . . Diesel and Carbureted Engines . . . Motor Trucks . . . Farm Tractors and Equipment.

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Look into the rock-lugging, grade-beating 24-ton "95"...

- **Bonus-powered,** with a 335 hp high-torque turbo charged diesel engine to beat steep grades and high altitudes with full payloads!
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- **Massive frame stamina**—with 277 lbs. of high-strength, shock-resisting steel for each rated ton of carrying capacity.
- **Springs with extra leaves** and **extra length** to cushion the payload, smooth the ride.
- **Positive power-steering, Torqmatic braking,** panoramic vision, for unmatched operating ease and load-speeding safety.
- **Up to 25% higher hauling speeds**—the "95" can high-ball, fully loaded, up to 38 mph.
- **Faster reverse speeds**—for spotting to load, or positioning full loads for dumping. The gear-drive "95" can travel up to 7.1 mph. in reverse.
- **9-second dumping**—another cycle-speeding feature.

...and the 250-hp, 18-ton "65" has equally outstanding features.

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Power for steep grade climb-outs wins steady job for five "65's"

Bonus Turbo Charged Diesel power to deliver extra-tonnage loads up a haul road with a 17% average grade accounts for the dependence of Caldwell Engineers on five "65" Payhaulers—on the $13 million hydro and flood-control Oliver Dam, Columbus, Ga.

Contractor doubles load delivery speed with positive Torqmatic braking!

Central Pennsylvania Quarry and Stripping Co. credits *Torqmatic braking* of their 5-unit "95" Payhauler fleet with doubling load delivery speed—by increasing safe downhill hauling speeds! They've compared "95's" directly to other off-road equipment on rock-hauling duty!

features ownership!

Prove what it means to command the Payhauler ratio of power to payload—for hauling up to 25% faster; beating grades and altitude. Try Payhauler "pick-up-truck" spotting ease—"zip-around" power steering—exclusive high reverse—and all the other Payhauler advantages. See your International Construction Equipment Distributor for a demonstration!

High-percentage availability proves inbuilt stand-up-ability!

98.5 work availability through one measured 12-week period is the mark set by a 10-unit "95" Payhauler fleet—high-balling rock over steep High Sierra grades, on mammoth Pool Hydro Project, for Southern California Edison Co. Such records result from reserve power, reserve frame and transmission strength, and reserve shock-resistance!

Another thirty "95" Payhaulers join Merritt-Chapman and Scott fleet!

Merritt-Chapman and Scott Corporation has added thirty more "95" Payhaulers to their Niagara Power project equipment spread. Now, the M-C and S Payhauler fleet totals 62 units—largest in the world! On St. Lawrence Seaway, huge Glen Canyon dam, and Niagara Power Project, M-C and S have proved rock-lugging, grade-beating Payhauler performance—and confirmed their satisfaction with repeat orders.

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FORD *Motor Company Central Office Building*

950,000 square feet of ultra-modern office facilities for 3,500 employees, including a cafeteria seating 638 and auditorium for 500.

Architects: SKIDMORE, OWINGS & MERRILL, NEW YORK
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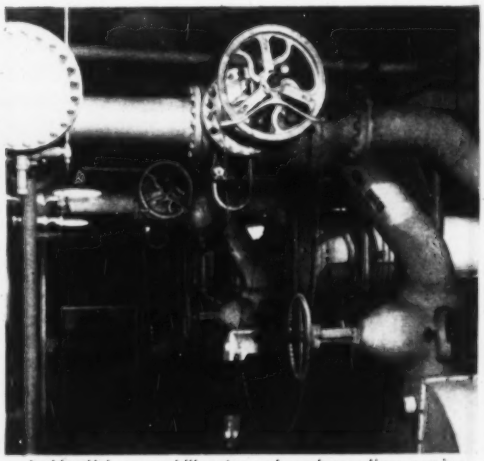
JENKINS VALVES

because efficiency is a part of the over-all design

Beauty, comfort, efficiency — Keynote in the planning of Ford cars, this combination also was sought and clearly achieved in the Central Office Building of Ford Motor Company, Dearborn, Michigan.

With efficiency a part of the over-all design it is not surprising to see Jenkins Valves on the plumbing, heating and air conditioning pipelines in this superb building. For almost a century the name JENKINS has meant reliability . . . valves with the enduring quality to last the life of a building. It will pay you to have this important assurance when you specify or install valves, especially since Jenkins Valves cost no more. Jenkins Bros., 100 Park Ave., N.Y.17.



Jenkins Valves on chill water and condenser lines serving Ford building's 2,200-ton air-conditioning system.

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ENGINEERING NEWS-RECORD

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Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

SCALPED?—The Federal Power Commission dropped a bombshell on the Niagara Falls hydro project this week. FPC ruled the New York State Power Authority cannot build a storage reservoir covering 1,383 acres of the Tuscarora Indian Reservation. The ruling was requested by the U.S. District Court of Appeals for the District of Columbia. FPC was ordered to rule on whether the reservoir would interfere with the established purpose of the reservation. The commission observed that another site might result "in a plan not best adapted to the comprehensive development of the Niagara River. . . ."

TOP MAN FOR TOP COMMITTEE—Chances are John Dunlop will be invited to serve as impartial chairman of the construction industry's new joint labor-management committee (p. 86). Mr. Dunlop is former head of the National Joint Board. Unions and contractor associations are expected to name their temporary members in time for the committee to hold its first exploratory meeting early next month.

TAKING THE HEAT OFF—Fewer fire tests may be needed on future new products. Bureau of Standards scientists have developed a desk-size analog computer that rapidly estimates transient heat flow through construction materials, thus eliminating the need for fire tests.

LOUISIANA PURCHASE, TEXAS-STYLE—A Texan now owns one-third of New Orleans. Toddie Lee Wynne and his family, of Dallas, bought 32,000 acres (50 sq miles) of undeveloped land east of the city's downtown area for something between $30 million and $40 million. The land will be developed for industry and housing.

YOU CAN TAKE IT WITH YOU—The Hawaiian Dredging and Construction Co. startled the Corps of Engineers with a bid of $259,650—about $700,000 under the Corps' estimate—to dredge a new entrance to the harbor of Honolulu, Hawaii. Reason for the low bid: Contract allows the contractor to use the dredged material on another project.

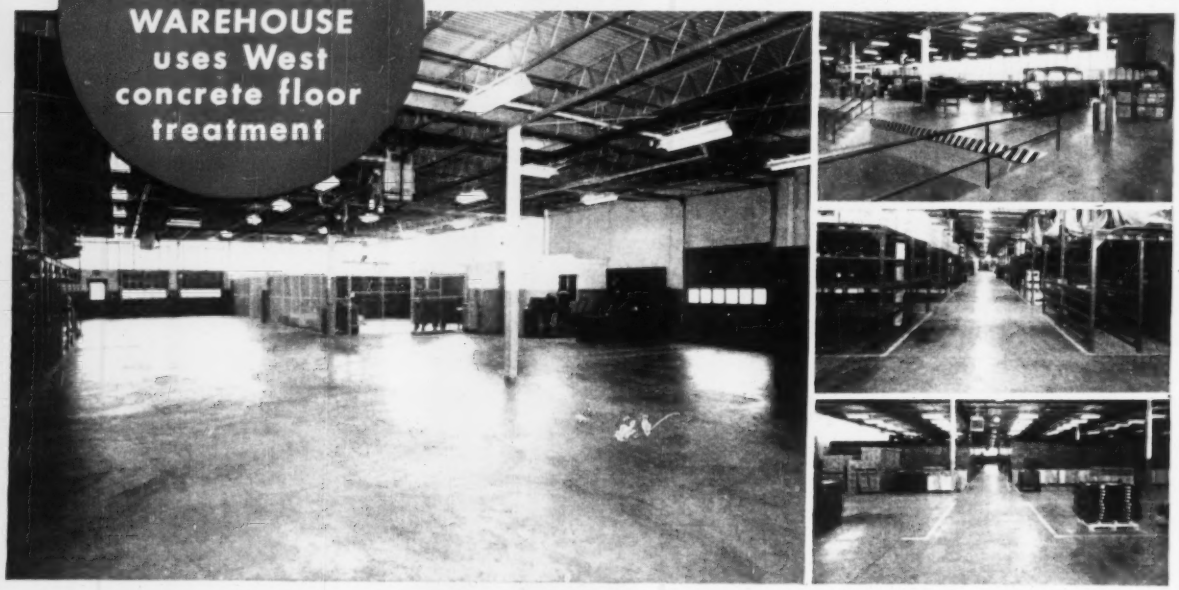
EQUIPMENT STRIKE—Eight Allis-Chalmers Manufacturing Co. plants were struck by members of the United Auto Workers Union this week, when collective bargaining talks broke down. Negotiations have been under way since last June.

CAN THEY HIT?—Consulting engineers will help decide whether the Philadelphia Phillies' baseball franchise stays in Philadelphia or moves across the river to Camden, N. J. The club has asked Robert R. Nathan Associates, Inc., and Esbach, Pullinger, Stevens and Bruder to make a study to determine the location of a new stadium.

Still another GMC TRUCK & COACH WAREHOUSE uses West concrete floor treatment

As in several previous GMC warehouses this **"one application treatment"** is exhibiting exceptionally fine durability to heavy duty service. Plans are to specify WEST Concrete Floor Treatment for all new warehouses — and apply it under the supervision of the WEST Representative.

At GMC Truck and Coach Division parts warehouses construction is under the direction of Mr. John J. Wygzoski, National Field Warehouse Manager, General Motors Truck and Coach Division, General Motors Corporation, Pontiac, Mich.



ONE APPLICATION OF ONE CONCRETE FLOOR TREATMENT

CURES · HARDENS · SEALS CONCRETE SURFACE

WEST Concrete Floor Treatment is a proven time-saving, labor-saving product that 1) Cures 2) Hardens 3) Seals newly-laid concrete surfaces with *one* application. It is a rubber based formulation with a quick drying solvent. Formerly as many as three separate products and applications were needed to obtain the same results.

WEST Concrete Floor Treatment can be applied immediately after horizontal surfaces have been troweled or as soon as the concrete can be walked on. Usually in *one* to *eight* hours. It is applied quickly and easily with a lamb's wool applicator. All the labor formerly required for cleaning the concrete surface after delayed concrete drying, and between the use of as many as three separate products and applications is eliminated.

WEST Concrete Floor Treatment is applied immediately after troweling. Its fast drying permits subsequent building operations to be speeded. It also dustproofs as it seals. This speeds the final cleaning. All foreign matter is easily flushed off the surface.

WEST Concrete Floor Treatment enables newly-laid, wet concrete to retain 95% of its moisture. This permits it to cure and harden while sealing the surface against acids, oils, greases and other foreign matter. This incongruous aspect of holding back most of the moisture while permitting some moisture to escape slowly is the key to this product's amazing success.

WEST Concrete Floor Treatment is colorless and will not alter the color of the poured mix. It goes on evenly and spreads quickly without streaks. One gallon covers from 300-350 sq. ft.

WEST Concrete Floor Treatment is fully attested, fully proven across the United States and Canada. Full details and samples are available immediately from any of WEST's 400 specially trained representatives from coast to coast. Write, phone or wire your nearest WEST office.

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WASHINGTON OBSERVER

- Highway figures face debate
- VA interest rates going up
- Little chance for school construction
- Togetherness on the Columbia River

● **There may be a hot debate over a new report on the status of the federal highway program (p. 26). Reason: The figures look more impressive at first glance than they do when they're analyzed.**

The 4,701 miles of interstate highway now open to traffic include some 2,365 miles of road taken into the system intact, mostly tollroads.

Congressional leaders aren't unhappy over the progress shown because they expect an upsurge soon. Their evidence lies in route location figures, right-of-way acquisition and engineering designs, not shown in the report.

But the Bureau of Public Roads may have a hard time satisfying critics representing the motorist and other highway users. They see billions of dollars going into the program without much newly constructed mileage.

This is likely to increase the pressure for a faster rate of highwy construction and sharpen the conflict over how to pay for it. President Eisenhower wants to up gas taxes to stay on a pay-as-you-go basis or else slow the program down to match lower revenues. Many Democrats want to keep spending up, without increasing gasoline and other user taxes.

—

● **A real breakthrough on housing is in prospect with the approval of higher interest rates on GI mortgages by the House Veterans Affairs Committee (p. 80).** This committee really writes the ticket on such matters, and it is taken for granted that the new rate of 5¼%—up from the present 4¾% ceiling—will be effective before too long.

This action is expected to reverse the downward trend in new Veterans Administration guaranteed mortgage loans. There's been a sharp drop in recent months in requests for GI appraisals. VA starts accounted for less than 10% of the 1.15-million private home starts last year. Back in 1955, VA starts totaled 30% of 1.31-million private starts.

—

● **A new stab at federal aid for school construction is being worked on by Welfare Secretary Arthur S. Flemming.** It could turn out to be similar to President Eisenhower's 1957 plan, which included, among other things, $1 billion of federal grants to match local funds 50-50.

But discount any optimistic reports you may be reading. Sentiment in Congress is such that passage at this time seems almost impossible. The segregation issue still controls the situation.

—

● **There may be some progress soon on U. S. and Canadian efforts to get together on development of the Columbia River.** In the past, the two countries have pretty much gone their own way. First the international board of engineers will report to the International Joint Commission in March on how best to develop the basin. Next, the two countries asked the IJC to come up with recommendations for measuring benefits of basinwide development, including water storage and hydroelectric output, and findings cost allocation. The IJC starts its meetings in New York City, February 17.

US RUBBER SEARLE SLEEVES

"U.S." Searle Sleeves help roll up 4,000 tons an hour

To build a causeway, the contractor planned on excavating and placing over a million yards of fill a month by conveyor belt.

Trouble began when mud and sand built up to an almost concrete-hard finish on the return idlers. This accelerated cover wear, caused the belt to wander, also caused excessive belt stress—all of which would result in premature failure. Then a "U.S." Belting Engineer suggested patented U. S. Rubber Searle Sleeves on the return idlers. Over six hundred of these specially designed rubber sleeves were cemented to the 6"-diameter idlers. Build-up of mud and sand ceased and wandering of belt stopped. The sleeves gave fine performance, needed no maintenance, and moved 4,000 tons an hour.

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Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.

What Are We Doing About Floods?

Present protection against floods is woefully inadequate.

That key fact stands out following last month's disastrous floods.

Losses in Ohio alone totaled about $75 million, the Corps of Engineers estimates. And that preliminary figure is on the conservative side since not all areas are included.

Flood losses in the U. S. average more than $700 million a year, estimates the Corps, which has about 90% of the federal responsibility for flood control.

About one-third of this could be prevented by flood-protection works now under construction or authorized for future construction, the Corps says. Cost of these projects totals $5.2 billion (see table on next page).

Another one-third could be prevented by other works that have not been studied in detail, but may prove economically justifiable in the foreseeable future. These would cost $8 billion.

All these projects might be completed by 1978 at the rate of appropriations prevailing for the last five years.

• **Some flooding inescapable**—All the improvement would still leave one-third of present losses. That fraction cannot be economically prevented, the Corps says. Protective works would cost more than their benefits would be worth.

The battle against flood damage is viewed by some as almost a losing cause. Resources for the Future, Inc., a research group financed by the Ford Foundation, reports a preliminary finding that "large public expenditures on flood protection works since 1936 have not been accompanied by commensurate decreases in flood losses."

This is not due to physical shortcomings of the protective works carried out. They usually contain the floods they are designed for. But there is more property to be damaged along the rivers now.

"In all of the urban areas examined," reports the study group, "there was a net increase in number of structures in the flood plain between 1936 and 1957 . . . even in cities which declined in total population during the same period."

The Corps of Engineers recognizes the inevitability of future river valley development and its importance to the economy of the country. Corps opinion favors flood control and protection to the extent feasible, but also considers some kind of flood insurance desirable to cushion property owners against unpreventable losses.

• **Payoff in Ohio**—Corps estimates on damage prevented and damage that might have been prevented in some Ohio areas during the latest floods show how well protective installations can work.

Fourteen reservoirs on the Muskingum River upstream from Zanesville kept water level in the city 11.4 ft lower than it would have been otherwise. This cut Zanesville's losses by have totaled $44.5 million.

Had Dillon Reservoir been completed, instead of still under construction up the Licking River from Zanesville, the flood would have crested 6.6 ft lower yet. Then Zanesville's comparatively light losses of about $235,000 would have been averted. The Dillon project also would have prevented most of the $800,000 damages suffered in the rest of the Muskingum River Basin.

Losses of $10.5 million occurred in the Youngstown and Warren areas of the Beaver-Mahoning River Basin. But without the existing Berlin and Mosquito Reservoirs, water would have risen another 5.3 ft and damage would have totaled $44.5 million.

These two reservoirs cost $10.3 million. Before the January flood, they had already prevented $15 million in damage. Therefore, the original $10.3-million investment has now resulted in a $49-million reduction of losses.

Reservoirs on Ohio River tributaries kept main-stream flood levels down considerably. *(Turn the page)*

Existing flood-control projects throughout the Ohio Basin cost about $300 million. These projects had prevented losses estimated at $520 million up to the middle of 1958. Inclusion of the damages prevented during the latest flood will raise the total to about $640 million, which is more than twice the project cost.

• **Congress cooperates**—Congress has authorized essentially all flood-control plans recommended by the Corps. And the Corps is proceeding with construction of practically all of the major plans authorized.

Federal money for flood control has been laid out in increasing amounts since the 1930s. Congress appropriated $81 million in 1938, the first appropriation after enactment of the General Flood Control Act in 1936. Last year the amount was $300 million.

Today the Corps' authorized flood-control program is about 44% complete for the nation as a whole. The figure varies widely in different regions. In the Lower Mississippi area, it's about 65% complete; about 50% in the Ohio Basin. Lowest completion figure for any area is 21%, in the Upper Mississippi region.

• **Whither flood insurance?**—A flop so far is the federal government's entry into flood insurance through the Federal Flood Insurance Act of 1956. But not all hope for it has expired.

The act authorized federal assistance to insure individuals, businesses and public bodies against damage by floods and tidal waters. After it was passed, the Federal Flood Indemnity Administration was set up within the Housing and Home Finance Administration to plan the program.

But Congress failed to put up money to put the plan into operation, so HHFA mothballed it in 1957. The act is still on the books.

The practical demise of the flood-insurance program was a good thing, according to some critics.

"Whatever the reasons for the Congressional block on appropriations," says Prof. Gilbert F. White, of the University of Chicago's flood-conscious geography department, "it was a wise action in terms of national flood policy. To have gone ahead with the flood-insurance program on the announced basis probably would have plunged the nation into an impracticable effort that would have aggravated the flood problem."

A basic flaw in the proposed federal rate structure was its lack of a graded-risk basis, according to Professor White. "This would have meant that a man owning a house perched perilously would have the same rate as a man with a house high up on the same valley where floods reach only once in 100 years.

"The first owner would be likely to take advantage of rates far below his actual risk. The second man would be reluctant to pay what for him would be high rates considering his small risk of flood. Thus, what insurance experts call 'adverse selection' would begin to operate."

The result would be to load the plan with the worst risks.

• **Insurance remedies?**—It's possible that federal flood insurance could come back to life. Last December the Council of State Governments, with cooperation of several technical and planning societies, called together a group of local, state and federal officials in Chicago to find out what could be done about flood insurance. Among other actions, they recommended changes in the Federal Flood Insurance Act to make it workable.

Under the amended act:

- Insurance rates would be based on risk.
- Present deadlines for flood-plain zoning (already expired) and state participation (June 30, 1959) would be removed.
- A minimum number of states in scattered sections would have to participate before the plan would become effective.
- Flood-risk data would be disseminated to the public in areas where insurance could be obtained.
- Pilot areas would be selected for varied hydrological conditions.
- States would be given a greater voice in determining policy.

Regional Picture: Flood Losses and Prevention Costs

(in millions of dollars)

Region or Basin	Losses now (annual aver.)	Loss reductions expected on completion of economically justifiable protective works: Now under construction	Authorized, not started	Remainder	Losses not economic to prevent
New England	$ 22.5	$ 7.8	$ 3.8	$ 3.6	$ 7.3
Middle Atlantic	48.8	4.4	6.3	21.4	16.7
So. Atlantic-East Gulf	24.7	5.1	0.3	10.1	9.2
Lower Mississippi	23.5	6.3	2.9	3.6	10.7
Gulf-Southwest	65.4	5.4	16.6	31.5	11.9
Arkansas-White-Red	89.5	5.6	8.4	17.3	58.2
Ohio (except TVA)	102.7	7.3	26.7	30.1	38.6
Upper Mississippi	78.4	13.1	18.8	24.1	22.4
Great Lakes	16.4	0.6	0.2	11.7	3.9
Red River of the North	6.1	0.1	0.2	1.6	4.2
Missouri	115.0	18.0	23.4	48.6	25.0
Colorado	9.7	2.1	0.7	4.4	2.5
Great Basin	3.6	0.1	0.9	1.6	1.0
Central Valley	229.9	9.4	3.0	7.9	2.6
Calif. Coastal Areas	34.0	2.8	14.9	8.9	7.4
Columbia	34.4	4.8	9.9	12.7	7.0
North Pacific Coast	3.5	0.7	0.1	0.8	1.9
Totals	**$701.1**	**$93.6**	**$137.1**	**$239.9**	**$230.5**
Project Cost	.....	**$2,500.0**	**$2,700.0**	**$8,000.0**	.....

Foreign Competition

Pressure to give more jobs to non-U. S. firms grows

U. S. construction contractors may be in for a wave of new foreign competition for prime contract awards on overseas military construction projects.

In the past, U. S. firms have generally received preference on such work. Foreign construction companies, however, have been allowed to be partners with U. S. firms in joint ventures to bid on prime awards. Indeed, in certain cases this was required by treaties providing the U. S. with base rights.

Now there's talk of allowing foreign construction companies to take prime contracts on their own—without U. S. partners. Although the Pentagon claims there has been no general policy change that would expose U. S. contractors to new competition from foreign contractors, defense officials concede there is a growing trend to permit foreign firms to bid on and win military construction prime awards.

In France and Great Britain, for instance, the U. S. already has been forced to accept a new procedure. Under it, the two countries award the construction contracts for U. S.-financed military bases—and normally the awards go to their own nationals.

Pentagon officials say they are under increasing pressure from Canada to place construction contracts there with native firms. The Defense Department has made concessions, now allows Canadians to bid in competition for prime contracts with U. S. firms.

Still, there's a factor favoring U. S. contractors: the secrecy surrounding much of the overseas military construction program and the natural U. S. reluctance to allow a foreign firm to build secret installations.

Foreign producers of materials also are getting an official break. The Pentagon has acted to push procurement of building materials from foreign sources of supply.

The action came several months ago in a regulation to clarify the effect of the liberalized "Buy American" policy on construction. Under this policy, procurement of materials is normally made from foreign suppliers if their bids are at least 6% under the bids of U. S. suppliers, or at least 12% under the bids of U. S. suppliers who qualify as a small business or who are located in labor surplus areas.

Up to now, the policy has not been enforced in construction; it has been optional to buy building materials from foreign or domestic sources. The new regulation makes it mandatory to buy from low-bidding foreign suppliers.

Cofferdam Flooded to Beat Flood

The winter floods along the Ohio River stopped work on the new lock construction at Dam 41, Louisville, Ky.

The Corps of Engineers decided to flood the cofferdam protecting the work on the 1,200-ft-long lock when it was predicted the flood would crest at 59 or 60 ft—3 ft above the cofferdam.

Only five hours were needed to fill the enclosure but pumping it dry takes seven days.

Hardaway Construction Co., Columbus, Ga., is contractor for the new lock, which is part of the Corps' Ohio River modernizing program (ENR Apr. 17, 1958, p. 65).

Big Bend to Be Higher, Have More Power

Approval has been granted to raise the height and double the power capacity of Big Bend, sixth and last of the Army Engineers' Missouri River dams.

The new plan calls for eight generators of 60,000 kw each instead of the previously planned four-unit plant (ENR Sept. 25, 1958, p. 28). The dam would be raised six feet.

The changes would add $52 million to the 1958 estimate of $85 million for the project.

Water at the new height will back up to the toe of Oahe Dam above Pierre, S. D. and Farm Island, a state-owned recreation area, will be flooded.

The Senate Public Works Committee will hold a public hearing February 16, at Pierre, to discuss the loss of the island.

Big Bend will be located at Fort Thompson, above Chamberland, S. D. Preliminary work and access-road construction will be started this spring.

It was originally planned to build the dam right in Big Bend, a 25-mile oxbow in the river. Power tunnels were to be run across the mile-wide neck of the loop (ENR Aug. 30, 1956, p. 25).

However, investigation showed that a downstream dam would avoid the extensive power tube excavations, and offer an increase in head that would help increase the power output. Also, better foundation conditions were found at the downstream location.

You'll Buy More New Equipment

Reasons:
- **Construction volume will increase**
- **More old equipment must be retired**
- **Prices will not go down**
- **Delivery time will be longer**

The men who sell you the equipment you need confidently expect to sell you more of it this year than they have for several years past.

The optimistic expectations gleaned from the annual meeting of the Associated Equipment Distributors in Chicago last week are based on this consensus:

Construction volume this year will increase from 3 to 10%.

And the confidence is bolstered by these facts:

- New equipment purchases have lagged behind on the expanded highway program, and many of the older machines now being used have reached the turn-in or junking stage.
- Equipment prices are rising, therefore now is a logical time to buy.
- Dealers' inventories will be much lower than in recent years; previous easy hand-to-mouth buying practices won't be possible this year.

In brief, the purchaser will face more work, higher machinery prices, and the necessity for longer lead times on deliveries.

The equipment dealers were also told that their average net profits had reached such a low point in the past two years that they cannot help but be higher in 1959. The mere fact that such hopes are held out will spur the dealers to more careful selling practices, making bargains more difficult to find.

If such predictions are true, if more equipment is going to be sold in 1959, it is important for the purchaser that the equipment distributors be technically and financially able to sell it wisely and service it promptly and efficiently.

This AED convention, with a registered attendance of 4,200, was a serious forum to promote that concept. Distributors discussed such problems of industry-wide interest as financing equipment sales, warranties and government sales of surplus equipment. And they held a public press conference with construction industry leaders that brought out answers to many questions of broad general interest.

• Be more efficient—Keynoting the five-day convention, outgoing President H. D. Anderson, president of Rish Equipment Co., Bluefield, W. Va., warned the distributors, "You will have to take a hard look at your cost of doing business, trim nonessential expenses and look for more economical ways to get the job done."

This, he said, will necessitate turning down unprofitable business in some cases and, in other cases, analyzing the lines currently being handled, based on operating costs.

Candidly admitting that 1958 was a "very disappointing year," Mr. Anderson said he is convinced the low point in sales and profits has been reached for the bulk of distributors. He predicted 1959 will be a banner year and urged "better management" as a means of reducing costs and increasing profits.

• Used equipment—Similar timely tips on increasing profit and providing better service were presented by Allan Coe of Finning Tractor & Equipment, Ltd., Vancouver, British Columbia. Mr. Coe advised his listeners to "stop treating used equipment as though it were something that should be kept in the basement or backyard."

To merchandise used equipment properly, he said, it should be well displayed, brought into the best possible condition, priced right and described honestly. Used equipment salesmen should be as experienced as those selling new equipment, he said.

Mr. Coe pointed out that many customers need used equipment. They should be able to get it readily and buy it with pride and satisfaction, he said. Unless they can do so, Mr. Coe warned, used equipment will continue to choke the yards of many equipment dealers, draining their profits and thus lowering the level of service that can be furnished on new equipment.

• Surplus equipment—The many-sided question of surplus equipment and what to do about it is not a new one. But it still ranks as one of the chief concerns of manufacturer and distributor alike. Here's what's happened as told in a round-table presided over by J. A. Benson, Benson Tractor Co., Houston.

Defense agencies over-bought considerable construction equipment, which they later declared surplus.

Substantial quantities of the machinery are being made available to state, county and municipal agencies at nominal costs. This creates a serious problem for both the manufacturer and distributor, since more than 15% of the equipment dealers' annual business comes from the sale of construction machinery to state and local governmental agencies.

There is also evidence, reported some distributors, that certain local governmental agencies are using surplus equipment in competition with the dealers' contractor customers. Other reports say some of these agencies have actually leased such equipment in violation of their contractual agreement with the disposal agency—or have sold it to potential customers of the equipment dealers.

AED adopted a resolution urging federal agencies disposing of construction equipment to "review their regulations and procedures governing the disposal of such equipment to local governmental agencies."

AED also wants Congress to investigate the surplus disposal program to see if additional legislation is needed to protect the normal channels of distribution from governmental competition, and to examine the utilization of current defense inventories of equipment.

Improved customer service results from greater efficiency—one product of better distributor-manufacturer relations. Following this year the pattern of previous annual meetings, the conference gave the distributor and the manufacturer an opportunity to state what each wants from the other.

• What the dealer wants—The distributor wants closer contact with management and more frequent calls from factory representatives; better market forecasting; less direct selling of equipment to contractors at special discounts and thus bypassing the dealer; easier terms; more uniform discounts; and more sales and service training of dealer representatives.

• What the manufacturer wants—By contrast, the equipment and machinery manufacturer, in a number of instances, wants his dealer to do a better job of merchandising small lines of equipment—especially when this constitutes a sizable portion of the dealer's sales. He wants his distributors to pay more attention to the management end of merchandising equipment; and to take a more realistic look at the value of

This Year

trade-ins. The manufacturer also wants his dealer to be more cooperative in forwarding customer needs and suggestions for improving products.

• **What they both need**–Both the equipment manufacturer and distributor agreed on the need for more tax relief, especially in the small business category. Many need more capital for operations and expansion.

They present a united front against the disposal of federal surplus equipment, and they need more uniformity in warranty provisions for new and used equipment.

• **New officers**–F. J. Fitzpatrick, president of Parker-Danner Co., Hyde Park, Mass., was elected president of AED (see p. 55). J. A. Benson, of Benson Tractor Co., Houston, was elected executive vice president. The three new vice presidents are: H. J. Mayer, Western Machinery Co., San Francisco; R. F. Newlin, Newlin Machinery Corp., Kansas City, Kan.; and J. A. Young, F. J. Fyfe Equipment Ltd., Regina, Saskatchewan. Braxton Blalock, Jr., Blalock Machinery & Equipment Co., Atlanta, was elected treasurer.

AED Roundtable Press Conference . . .

The Questioners . . .

John Madigan, national editor, *Chicago American*; Robert F. Bager, publisher, *Engineering News-Record*; William Clark, finance editor, *Chicago Tribune*; Roy Fisher, feature editor, *Chicago Daily News*; Sam Lyons, editor, *Finance Magazine*.

Moderator, Martha Rountree

. . . The Experts

Robert M. Hoover, president, Kansas City Bridge Co. (contractors); G. A. Gilbertson, president, The Frank G. Hough Co., and president, Construction Industry Manufacturers Association (manufacturers); Herbert R. Silverman, president, James Talcott, Inc. (finance); and Bertram D. Tallamy, Federal Highway Administrator (government).

The Answers Give a Look Ahead

TALLAMY: The interstate program is on schedule for completion in 1972, but will need more money in the Trust Fund to stay there after 1961 . . . The Administration's proposed 1½-cent increase in the federal gas tax would fix up the Trust Fund . . . **If Congress doesn't approve the gas tax, not prepared to say where money will be found . . .** $40 billion is still estimated cost of interstate system, and increases in construction costs have not affected it yet . . .

Lead time of 21 months between project approval and start of construction cannot be reduced much . . . **Regardless of inflation, road program will not be delayed or cut back by the government . . .** Funds sought through additional gas tax have no bearing on present fears of inflation since they would not be spent until after 1961 . . . **No immediate prospect of government buying the tollroads,** and anyway their earnings will increase as they are incorporated into the interstate system and get the benefit of increased traffic . . .

Mileage under way or completed is not a fair way to measure a state's progress since costs per mile vary so widely; best way is to add up progress in planning, design, right-of-way acquisition and construction . . .

This should be a big construction year because pipeline is full of designs and purchased right-of-way . . . Most states are building feeder roads fast enough, but would like to do more if money were available . . . This year's contract total for all roads should be about $7.1 billion . . . **A federal license tag as a means of financing roads has been discussed,** but not formally at any governmental level, and don't know if White House has ever discussed it . . . A federal license tag would be difficult to police.

SILVERMAN: Contractors and equipment dealers should plan their financing programs farther ahead . . . **Interest rates will not go down, may go up** . . . Contractors would be helped financially by less stringent retainage on part of owners, but uniform retainage schedules are not a necessary answer . . .

Contractor failures should be less in 1959 than last year, when the recession and abnormal bad weather in some states took a big toll; also contractors will be more cost conscious in 1959, and there will be more business.

GILBERTSON: 1959 looks pretty bright now, but results will be affected by how well contractors find cost saving methods, distributors provide the right equipment and the necessary kind of service and manufacturers function in developing better machines . . .

There won't be so many mergers among manufacturers because business will be better for all . . . **Equipment and materials companies, which might be subject to strikes in the next few months, are building up their inventories** . . . Labor costs are an important factor in inflation, and when all fringe benefit payments are taken into account, labor costs may well be out of proportion . . . **Surplus equipment disposal by government agencies is not only a problem for manufacturers and distributors, it also helps too many inefficient contractors to get started.**

HOOVER: Contractors' inventories of equipment may be "dangerously low," but they can't be expected to take on many extra new machines just as insurance . . . **Contractors who over-extend themselves in financing their equipment are so "brittle" they can't take always-possible bad luck in stride.**

A cutback in public works expenditures, as a means of curbing inflation, would, of course, hurt construction, and also the economy.

Five-Purpose Lamppost Planned by New York City

New York City plans to replace its 120,000 lampposts with a new, five-purpose fixture.

The new lampposts, now in the design stage, will provide street lighting, traffic signals, police telephones, fire alarm boxes and street signs in a single installation.

Plans call for the posts to be used for street lighting alone or for lighting and any or all of the other four functions. New York hopes eventually to replace all of its 64 different types of ornamental lampposts with the new model.

A contract for the design, to be completed by June 1, was given to Donald Desky Associates, New York City.

The city's only conditions were that the new post be capable of accommodating incandescent, mercury vapor or fluorescent lamps, and that it be easy to maintain.

"Easy to maintain" means principally that periodic paint jobs will be unnecessary, according to a spokesman for the city's Department of Water Supply, Gas and Electricity, the agency responsible for the project.

The eventual centralization of call boxes, lights and signs may save the city millions of dollars in installation and maintenance, officials say.

New posts will be installed as the old ones become unserviceable.

The cost is expected to be about $80, for each lamppost, exclusive of light and fixtures. That's the price of models now in use.

Where Interstate Stands Now

What has been accomplished in the 2½ years since the nation launched its program of accelerated construction for the Interstate Highway System?

Reporting the facts put together by the Bureau of Public Roads, Secretary of Commerce Lewis Strauss made these points to Congress this week:

- **Today's traffic can travel on 12% of the 38,548-mile system.** The open section includes 2,365 miles of toll and free roads incorporated into the trunkline network. Another 7% is partially complete and contractors have started work on still another 10%.
- **More interstate mileage will soon be ready for bulldozers.** This includes 342 miles for which right-of-way is now available and 16,501 miles now in the process of acquisition, survey and design.
- **But no work has yet begun on 30%—12,368 miles—of the road.** However, route locations have been firmly fixed for all but a small part of this mileage. Work can move ahead on many of these project miles as soon as Congress resolves the current stalemate regarding federal interstate funds for fiscal 1961—due to be allocated to the states this summer.
- **Present objective of interstate construction is to complete as much mileage as possible to serve current traffic needs and defer final improvement to 1975 standards until later stages of the program.**

In all, 4,701 miles were open to traffic at the end of 1958. Only a small portion of the mileage is now fully adequate for 1975 traffic, but all of it can take 1959 traffic volume with relative ease and a high degree of safety.

Some of the segments now in use require grade separations not yet built at crossroads, widening of shoulders or replacement of bridges that are deficient in certain respects.

By 1975, however, the program proposes to have these sections and all other portions of the 38,548-mile system completed to full standards for the projected traffic of that year.

Secretary Strauss also emphasizes again that there will be no interstate construction money for fiscal 1961 until Congress acts to make funds available.

Lacking such action, the report says, the interstate system, after drawing zero in 1961, would get only $500 million in 1962 and only $1.7 to $1.8 billion in each following year. This is about three-fourths of the annual amounts authorized by Congress in the 1956 Highway Act that set up the program.

Congress, of course, will see that this situation is not allowed to develop.

Here's a Breakdown on Interstate Mileage

	Rural Mileage	Urban Mileage	Total Mileage	Percent
Construction completed or under way:				
Fully or substantially meeting standards and at least adequate for present traffic:				
Open to traffic	3,659.8	1,041.6	4,701.4	11.6
Not open to traffic	83.5	46.6	130.1	.3
Need further major improvement	2,450.0	215.0	2,665.0	6.6
Under construction	3,432.7	534.3	3,967.0	9.8
Total construction completed or under way	9,626.0	1,837.5	11,463.5	28.3
Total surveys, designs and right-of-way completed or under way	14,827.4	2,015.9	16,843.5	41.3
Total work completed or under way	24,453.4	3,853.4	28,306.8	69.6
No work started	11,463.0	905.0	12,368.0	30.4
Grand total of system mileage	35,916.4	4,758.4	40,674.8	100.0

Penn Pike Tries Again for Federal Aid

The Pennsylvania Turnpike Commission is continuing attempts to get U.S. reimbursement for part of its tollroad.

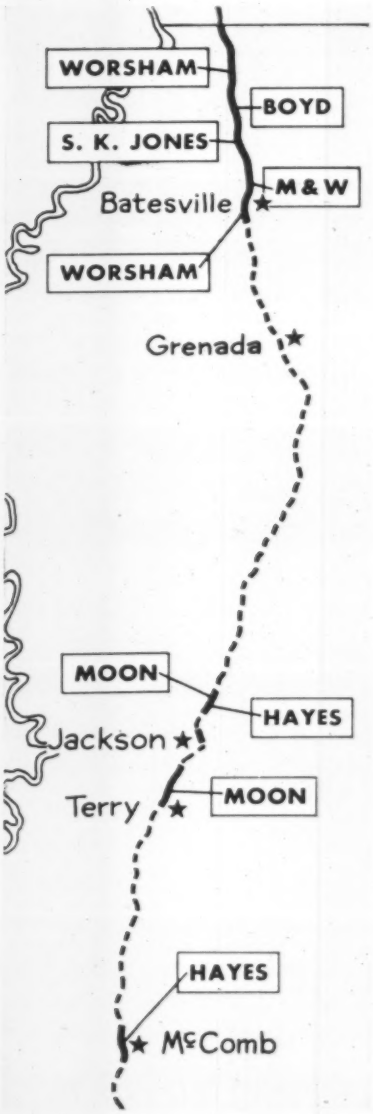
The commission has ordered a study of the road's mountain crossings in the western part of the state.

This original 160-mile section of the turnpike has been placed on the interstate system, but the Turnpike Commission has been unable to get federal reimbursement because of certain substandard conditions—principally in its tunnels. Seven tunnels have only 23-ft roadways that handle opposing traffic in two undivided single lanes. To be eligible for reimbursement, the commission must either build more tunnels or construct bypasses over the mountains.

CONTRACTORS FIGHT "WORST WEATHER IN HISTORY" TO

Punch new interstate main line through Mississippi

With big fleets of Allis-Chalmers construction machinery, contractors battle wet weather to move millions of yards of tough Mississippi clay, mud, sand and gumbo. More than 140 miles of the state's 676-mile proposed interstate system is currently completed, under construction, or awarded. The main line is U.S. 55 which runs generally parallel to U. S. 51 from the Tennessee line near Memphis south through Jackson to the Louisiana line. The new road will have a minimum of four lanes, be controlled access and are planned for expansion to six or eight lanes, if necessary. A check of the jobs in progress shows some of the problems . . . and how the contractors are solving them.



Worshams Work Near Tennessee Line

Worsham Brothers, contractors from Corinth, Mississippi, are working a five-mile section of U.S. 55, between Aldens and Hernando, Mississippi, near the Tennessee line. About a million yards of dirt is involved in the $986,000 contract. An additional four-mile section of U.S. 55, immediately south of Batesville, has been awarded to Worsham Brothers on a bid of $923,000. Work will begin in the early spring. The firm, a partnership of three brothers, Frank, Clifford and LeRoy, specializes in airport and highway construction in Mississippi, Alabama and Tennessee. The Worshams are using big tractors, motor scrapers and motor graders from their Allis-Chalmers fleet to keep the Interstate 55 job well ahead of schedule. Moving 9,000 to 15,000 yards every 10-hour shift, the company is making the most of every working day. By October, 1958, they had completed 62% of the work, with only 52% of the contract time elapsed.

(Continued on next page)

Frank Worsham, Jr.

Heaped scrapers kept constantly on the go during the rare dry periods is the Worsham Brothers formula for beating bad weather and tough dirt.

... move ahead with ALLIS-CHALMERS

Punch Main Line Through Mississippi

Boyd Builds Highways on the Run

Averaging up to 18 miles per hour — hauling 12,000 to 17,000 yards of sandy silt every 10-hour working day — keeps the Boyd job ahead of schedule. The Boyd Construction Company, Grenada, Mississippi, is working a seven-mile section of U.S. 55 between Coldwater and Senatobia. Eighty percent of the yardage is being handled by Allis-Chalmers TS-360 motor scrapers — with fast, effective loading boosts from Allis-Chalmers HD-21 crawler tractors.

Moving earth at high speed is a Boyd specialty. The company, in business since 1939, handles contracts averaging 1½ to 2½ million dollars annually, covering general highway and bridge construction and earth moving, as well as levee work on the Mississippi River.

On the U.S. 55 job, more than 2¼ million yards of fill are being

John Boyd

moved from borrow pits to build a 4-lane roadway across the headwaters of the Arkabutla Reservoir.

Unusually wet weather permitted only 20 working days during the first 5 months of last year. Now, Boyd is counting on his Allis-Chalmers machines to make up for lost time. The big TS-360's hauling 7 to 9 loads per hour on cycles up to 2 miles, are averaging up to 1,400 yards every 10-hour working day. The sandy silt coming out of a 2,000,000-yard borrow pit is running 3,000 pounds to the yard — yet Boyd's TS-360's are making excellent time in spite of spongy haul roads.

Wet Clay Complicates M & W's Section

W. C. Mathews and H. M. Whitfield are M & W Contracting Company of Tupelo, Mississippi.

W.C. Mathews

Mathews and Whitfield specialize in earthwork and structure construction on all types of highway, drainage, water, sewer and airport contracts. The company's fleet of

High-speed hauling helps the Boyd Construction Company keep its sections ahead of schedule. These 20-yd Allis-Chalmers motor scrapers average 7 to 9 loads an hour on cycles up to 2 miles.

...move ahead with

Allis-Chalmers motor scrapers, tractors and motor graders is rapidly completing the last cut and fill on the company's 5½-mile section of U.S. 55 during a mid-November survey of the job.

The $1,832,000-contract calls for 1,300,000 yards of excavation and 10 structures. Two of the structures are connected with a channel change on the Talahatchie River, where a horseshoe bend will be straightened and the old bed filled.

Mathews pointed to two reasons for this being his toughest stretch of road since his stint, during World War II, on General Pick's staff, building the Ledo Road in Burma. The two obstacles — wet weather and a subsurface strata of heavy red clay that stayed wet, even during the rare dry periods. The clay strata hampered all contractors working Mississippi's interstate main line U.S. 55 from the Tennessee line south to Batesville. Beginning two to three feet below the surface, it ran down far enough to plague most of the cutting operations. Invariably, Mathews pointed out, we'd get down to grade just as we were getting to good dirt!

M & W's Allis-Chalmers fleet helped beat both problems by moving heaped scrapers of the tough clay on a 10-hour-a-day, 6-day-a-week schedule . . . whenever weather permitted. Both men and machines performed so well that M & W's section is well ahead of schedule — 58% complete, with only 34% of contract time elapsed by October, 1958. This kind of performance is one reason for M & W's standardization on Allis-Chalmers construction machinery in the twelve years since they went into business.

S. K. Jones Awarded Four-Mile Section

The four-mile section between Senatobia and the State-Panola County line was awarded to S. K. Jones Construction Company, Memphis, Tennessee. The company began work with its Allis-Chalmers fleet in December, 1957, and with more than 900,000 yards of material to move, has managed to stay on schedule during the prolonged wet weather. The Jones Company's contract figure of about $641,000 includes four structures.

Moon Works Three Subcontracts for Interchanges and Frontal Roads

John H. Moon & Sons, Ridgeland, Mississippi, holds subcontracts on three sections of the new interstate main line. Two of these,

John H. Moon

between Jackson and Ridgeland and at Byram, Mississippi, call for structures only. The third, a four-mile section between Jackson and

(Continued on next page)

(Left) One of M & W's Allis-Chalmers motor graders handles finish grading in the cut. (Right) Top maneuverability of Allis-Chalmers motor scrapers lets M & W's big tractor-scrapers load in both directions . . . saves time by reducing travel for pusher tractors.

ALLIS-CHALMERS...power for a growing world

Punch Main Line Through Mississippi

Terry, is for construction of two underpasses and four frontage road bridges to convert present U.S. 51 to the controlled access U.S. 55. More than 630,000 yards of excavation is required. Moon is using medium-sized Allis-Chalmers motor scrapers and Allis-Chalmers crawler tractors to handle the earthwork — building frontal roads, approaches to overpasses and cutting drainage ditches. His hydraulically controlled scrapers, with positive down pressure — available only in Allis-Chalmers motor scrapers — are very effective on close-quarter ditch work where deep, short cuts are required. October reports show Moon has completed 47% of the work in only 33% of contract time.

Hayes Has Two Main Line Jobs

In each of the past ten years, J. R. Hayes Construction Company, Paris, Tennessee, has moved 10,000,000 yards of earth — or more. In addition to its highway

J.R. Hayes

contracts, the company handles clay stripping, street and airport work and asphalt paving in Mississippi and Tennessee. Right now, the firm is under contract to move a total of 5,000,000 yards on five jobs.

One of these is the 7½-mile section of interstate highway 55 near McComb, Mississippi—more than 1,500,000 yards to be moved in 360 workingdays. Hayes' fleet

Positive, hydraulic down pressure on the scraper bowl and plenty of push from the Allis-Chalmers torque converter crawler help operators cut a short deep drainage ditch on John H. Moon & Sons' job.

Three of J. R. Hayes' big Allis-Chalmers TS-360 motor scrapers are shown in the cut. Loads like the one on the right, plus excellent cycle time, helped keep work ahead of schedule in spite of bad weather.

...move ahead with

of Allis-Chalmers TS-260 and TS-360 motor scrapers moves as much as 15,000 cubic yards per 10-hour day — more than 100 loads per day per machine with hauls ranging from 500 yards to a mile (one way). With this kind of performance, Hayes expects to complete the job ahead of schedule, in spite of bad weather.

Another Hayes job on the Mississippi main line is a three-mile section between Jackson and Ridgeland. The $159,000-subcontract calls for more than 452,000 yards of excavation to rebuild the existing two-lane road, add a second double-lane roadbed and construct access roads to bring the existing U.S. 51 up to interstate specifications.

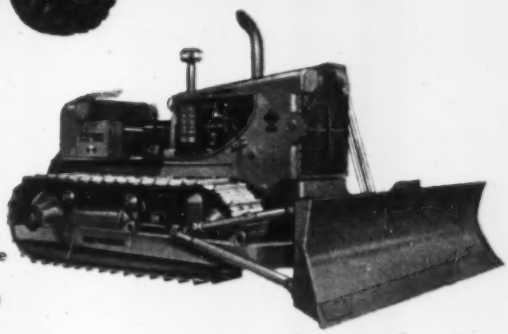
Hayes' fleet of Allis-Chalmers large and medium-sized motor scrapers heap loads in fast . . . average more than 100 loads per day per machine on hauls up to a mile.

As the story indicates, Mississippi highways are moving ahead at a rapid pace with Allis-Chalmers construction machines in the thick of the action. Performance on jobs like this proves their work capacity as the national highway system spreads across the country. Ask your dealer to show you Allis-Chalmers equipment at work on the *big* jobs in your area. Then, talk to the owners for the real low-down on Allis-Chalmers production ability. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

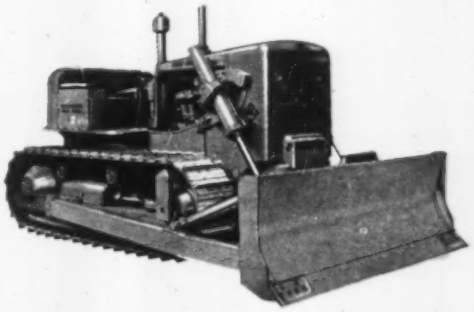
Machines like these set the pace

TS-360
20 yd heaped
280 hp
49,050 lb (approx.)

TS-260
17 yd heaped
230 hp
39,600 lb (approx.)

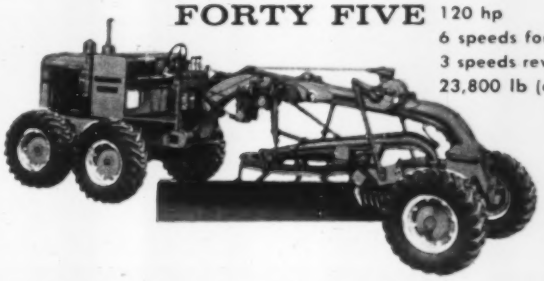


HD-21
225 net engine hp
Torque converter drive
56,260 lb
(approx. as shown)



HD-16
Torque converter drive
150 net engine hp
39,090 lb
(approx. as shown)
All-gear drive
148 net engine hp

FORTY FIVE 120 hp
6 speeds forward to 20.6 mph
3 speeds reverse to 7.0 mph
23,800 lb (approx.)



ALLIS-CHALMERS ...power for a growing world

Expansion Project Begins At Space Agency Station

A $21.2-million expansion program is under way at the Wallopps Island, Va., missile-research station of the recently formed National Aeronautic and Space Administration.

Construction on the island will include universal launching emplacements, a static test facility and a blockhouse that will serve as shelter and control center. Contract for design of these structures was awarded to Daniel, Mann, Johnson & Mendenhall, of Los Angeles, the same firm that designed the test facilities for the Atlas intercontinental ballistic missile at Cape Canaveral, Fla.

A causeway and bridge to span the two miles between the island and the mainland is being designed by J. E. Greiner Co., Baltimore. Support facilities on the mainland will be planned by Clark Buhr & Nexsen, Norfolk, Va.

NASA staff on Wallopps Island will conduct tests on the shape and design of manned capsules for space vehicles, and experiment with new rocket fuels.

Wallopps Island, eight miles long and 1,200 ft wide, lies in the Atlantic Ocean, two miles off the Virginia coast and 160 miles southeast of Washington, D. C.

The station's concrete launching pads are being designed to withstand a rocket thrust of 300,000 lb, plus a 50% impact factor. The pads will be surfaced with refractory concrete to protect them against heat damage. The emplacements may be used for launching both liquid and solid fuel research rockets.

The installation's blockhouse will be hemispheric in shape and have an interior diameter of 48 ft. The basic structure will be a 2-ft-thick shell of reinforced concrete. The shell will be overlaid with a packing of sand 5 ft deep. The sand will be covered with concrete sprayed on to a depth of 4 in.

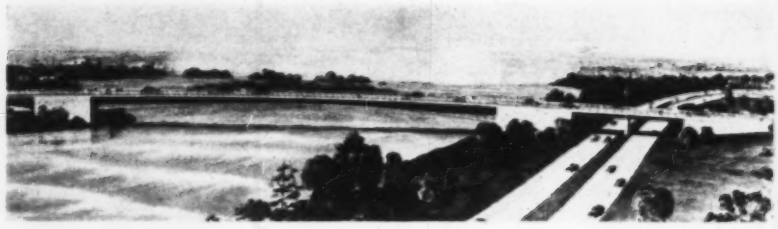
Navy Honors Three Firms For Navy Bases in Spain

The Navy awarded its Certificate of Merit this week to three construction companies for outstanding work done in building Navy bases in Spain.

The firms are Brown & Root, of Houston; Raymond International, Inc., of New York City; and Walsh Construction Co., of Davenport, Iowa, and New York City.

In a joint construction venture the three companies built bases at Zaragoza, Rota, Moron and Torrejon. The work cost about $350 million on a cost-plus-fixed-fee contract.

The Navy has made only one other such award to a constructor. Hawaiian Dredging Co. got it last year.



Niagara Falls to Get New Bridge

A continuous girder bridge with the longest single main span—450 ft—of any bridge of its type in the U. S. will be built this year over the Niagara River, just above the falls. The new bridge will connect the city of Niagara Falls and Goat Island.

Including two anchor spans and the main span, the bridge will have a total length of 590 ft. It will have a two-lane roadway, 24 ft wide, and two sidewalks.

Three lines of built-up continuous plate girders will support the main span. These girders will be 16 ft deep at the abutment ends and 7 ft deep at mid-stream.

The engineers, Praeger-Kavanagh, of New York City, devised concrete and steel counterweighted end spans, each weighing about 3,000 tons, to provide against deflection under traffic.

The counterweighted end spans will enable construction crews to dispense with tie-backs during the cantilevering of the bridge across the river. Steel will be landed on a temporary falsework at mid-stream and cantilevered again to the Goat Island abutment. No erection will be carried on from the island.

Bethlehem Steel Co. will fabricate and build the bridge for the Power Authority of the State of New York. The company will begin work in March.

The Connecticut Turnpike bridge over the Quinnipiac River, which has a main span 387 ft long, is now the country's longest plate girder span.

Around the Country . . .

• **"Essayons" suffers gash**—The Corps of Engineers' dredge, "Essayons"—due to take off for work on the Suez Canal (ENR Jan. 19, p. 25)—received a 60-ft gash in its side while working in New York Harbor last week. It's expected to be patched up in a few weeks. The dredge's Suez trip had been delayed because of administrative problems and engine repairs.

• **Seagoing road**—Miami, Fla. will get a 14.7-mile-long, north-south causeway down the middle of Biscayne Bay. It's designed to reduce traffic congestion in the northern part of the city.

• **ASCE grades to change**—Votes counted last week were about 10 to 1 in favor of changes in the membership grades of the American Society of Civil Engineers. Juniors will become Associates; Associates will be Members; Members will be called Fellows; and certain membership requirements will be affected in a constitution change. ASCE's Board will canvass the vote at its meeting next month in Los Angeles; the change should then take effect 30 days later.

• **Chicago hotel**—A $10-million hotel will go up across the street from Chicago's new Lakefront Exposition Hall on Lake Shore Drive.

• **Big red schoolhouse**—Some American leaders have "thrown wisdom to the winds and scientific method to the dogs" in a tendency to overestimate the Russian education system, says William W. Brickman, New York University professor just back from a visit to the U. S. S. R.

• **Nuclear Congress**—Dates have been set for the 1959 Nuclear Congress, the largest gathering of specialists in the atomic field. It will be held from April 5 to 10 at the Cleveland Public Auditorium.

• **Building start**—The Master Builders Co. has begun construction of a $3.5-million headquarters building in Cleveland, Ohio. Completion of the three-story, 101,000-sq-ft, concrete-framed building is scheduled for the end of this year. Completely air conditioned, the L-shaped structure will have parking facilities for 220 cars.

• **Ready**—If you're in a hurry to get a copy of the American Institute of Steel Construction's Structures, send a check for $4 now to AISC at 101 Park Ave., New York 17, N. Y.

PERMANENT PAVEMENT PATCHING
—HOT OR COLD—IN ANY SEASON

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Bituminous Materials Co.
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Knight-Bitumen Corp.—*Watertown*
Albany Asphalt & Aggregates
75 State St., *Albany*
Bimasco, Inc. *(2 plants)*
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Seaco, Incorporated
2700 Industrial Drive, *Columbia*

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Asphalt Products Co., Inc.
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CANADA
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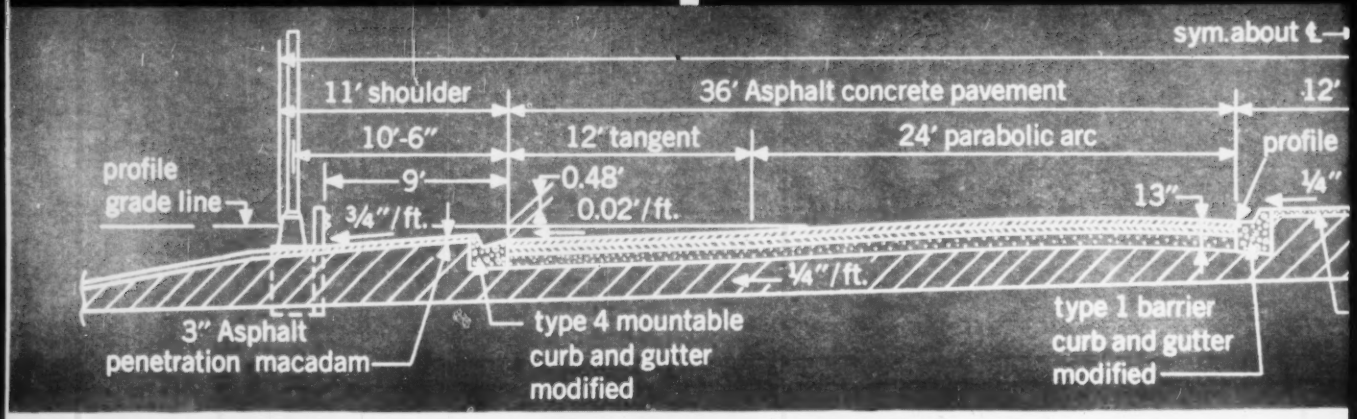
Eastern Representative:
John A. Daw
157 Church St., *New Haven 10, Conn.*

K. E. McCONNAUGHAY LAFAYETTE INDIANA
EMULSIFIED ASPHALT *PLANTS AND PROCESSES*

To lay Asphalt concrete on bridge decks in winter the contractor used three, 12-foot finishing machines. By paving simultaneously cold longitudinal joints were prevented. Finishers were followed immediately by 2- and-3-axle tandems.

One-inch binder course is compacted by tandems. Self-propelled pneumatic-tired roller ballasted with ten tons of sand complete compaction. Ordinary household detergent in water prevented Asphalt pick-up by rubber tires of the heavy equipment.



Chicago's Calumet Skyway proves it!

Modern, durable, Asphalt paving

Paving of the Windy City's 7.7 mile Calumet Skyway; an elevated, twin-36-foot-lane toll facility; started in October 1957. By April 16, 1958... just six months later... it was opened for traffic.

Mind you, the job was done in midwinter and had to be paced to the completion schedules of fill and bridge sections.

It is safe to say that when laid down in midwinter at this speed only modern Asphalt concrete construction could have satisfied the engineering standards for this pavement structure. Competitive bidding established that Asphalt concrete was also the least expensive material.

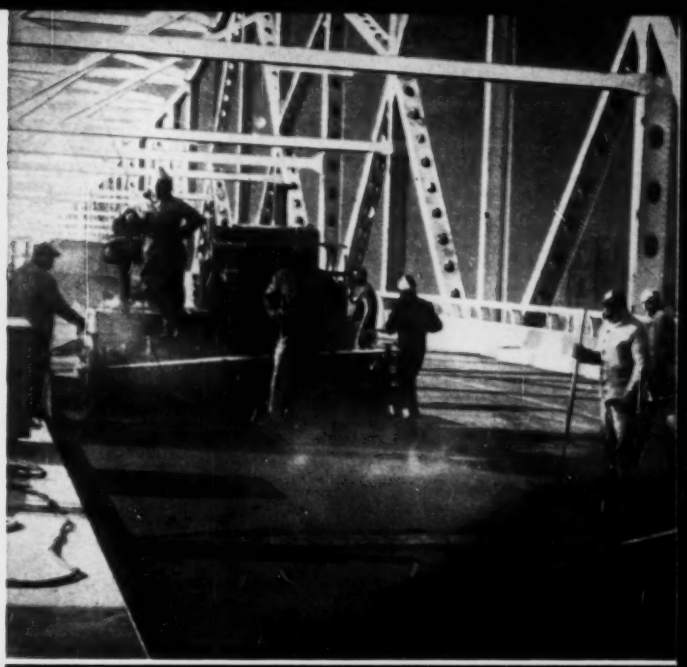
To the direct construction savings, resulting from the speed and low cost of Asphalt paving, must be added extra revenue realized by the ability to open this toll facility in time for 1958 summer traffic.

The road's designers point out that modern Asphalt construction also provides the desired durability, minimum maintenance, minimum traffic noise, fast melting of snow and ice with no trouble from deicing salts.

Asphalt concrete is easily the most versatile paving material.

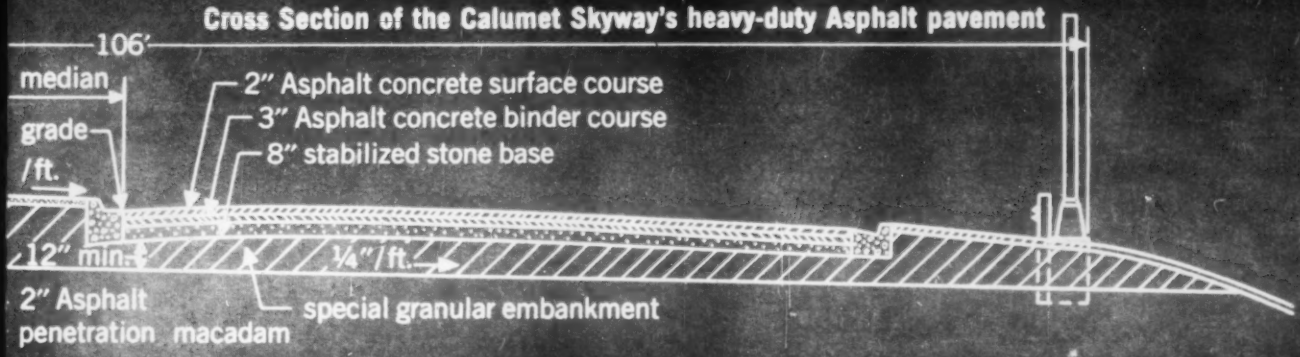
In this example Asphalt concrete proves out on 18-foot

Specially-equipped trucks bring mix to finishers. Insulated truck beds and tarpaulin covers protect mix, bring it to job at best laying temperature. Canvas aprons on spray bars of distributors keep prime from blowing on curbs and sidewalks.



Before and after rolling, luteman, raker and straight-edge man check the mat. Despite 2-inch high expansion and contraction plates every 100 feet, mat goes down true to grade. A 13-20 ton roller irons wearing surface to final smoothness.

Cross Section of the Calumet Skyway's heavy-duty Asphalt pavement

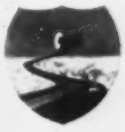


is done at record, tax-saving speeds

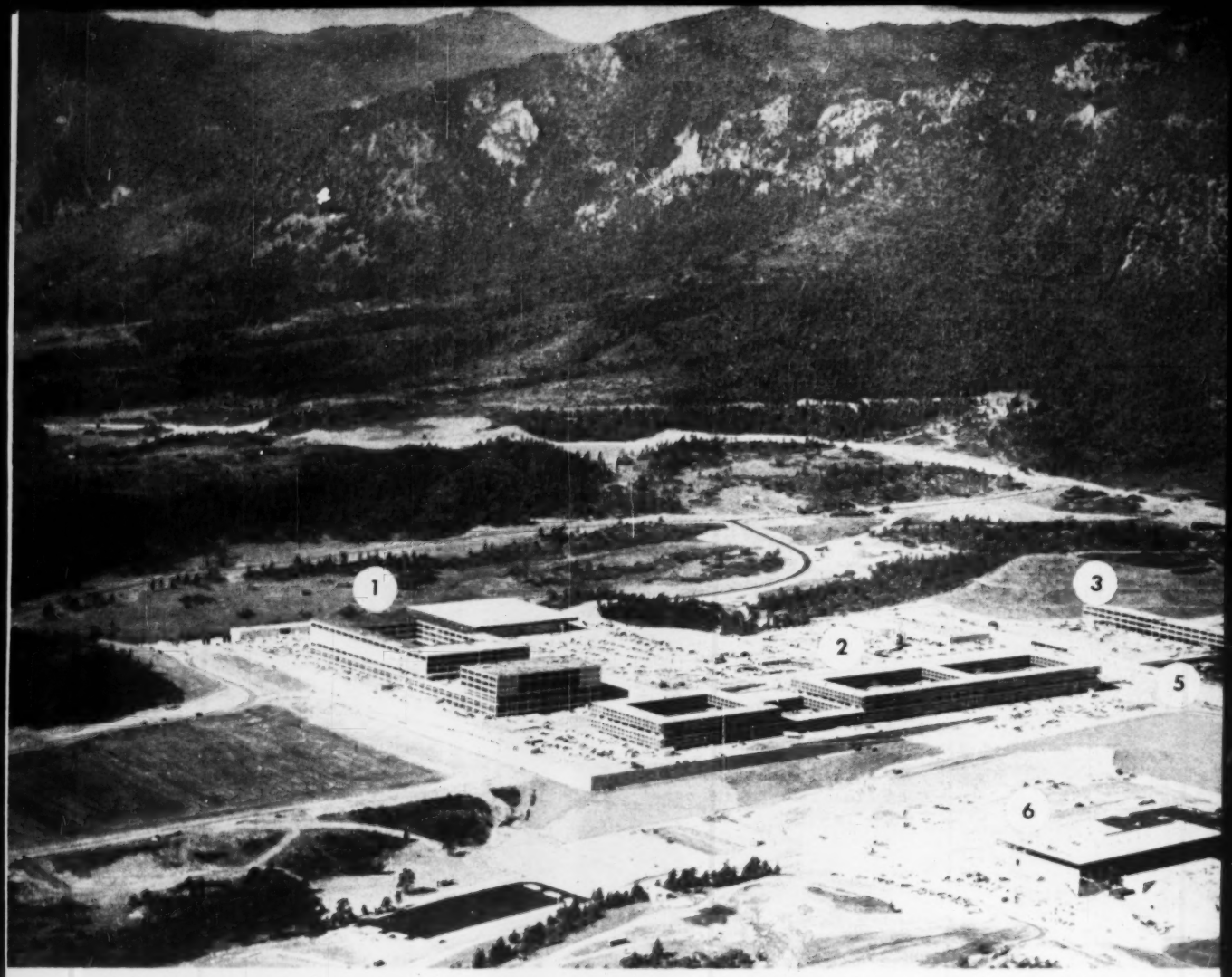
fill and on bridge decking. In Louisiana it is performing well over virtual quagmires. In Ohio, it proves ideal on glacial till. In New England, it has taken years of alternate freezing and thawing in its stride. Along Oregon's rainy coast Asphalt concrete is the only paving that lasts. In the Southwestern desert regions, where eggs can be fried on road surfaces, Asphalt concrete is by far the preferred pavement. In mountainous terrain, Asphalt concrete is the easiest material to lay and it conforms to foundation settlement without fracturing. In New Jersey, it was selected to handle the world's heaviest turnpike traffic loads... 4,012,815 vehicles in July 1958 alone.

Under all these conditions and more, modern Asphalt concrete has proved itself the least costly pavement to build and to maintain. When you specify it, you make your state's road-building tax funds go **much** further.

Ribbons of velvet smoothness...
***ASPHALT**-paved Interstate Highways*



THE ASPHALT INSTITUTE
Asphalt Institute Building, College Park, Maryland



U. S. Air Force Academy sprawls at the base of the Rockies in Colorado.

New Look: Air-Age Buildings for

They will be talked about for a long time to come, these buildings of the U. S. Air Force Academy at Colorado Springs.

They don't look at all like those at West Point or Annapolis, nor like the hallowed halls of learning at older universities.

The architecture of the new buildings is simple enough to be considered severe.

Except for the chapel, on which construction is about to start, the structures are low, horizontal and flat-roofed. Walls are continuous planes, marked with repeated rectangular patterns formed by glass windows in aluminum frames. Some walls have aluminum spandrels and column covers, some marble or brick for contrast. And some buildings have no enclosure at the various ground levels.

The chapel, too, is unlike conventional chapels. It is multispired and has sloping sides of folded-plate aluminum construction (ENR Dec. 25, 1958, p. 23).

But unconventional as they may appear, the buildings of the new academy are not the result of whim or of a desire to be different.

• Basic design approach—The architects had the unprecedented opportunity to plan a complete academy from scratch, and they tried to execute the project unhandicapped by preconceived notions. They considered the past and the future.

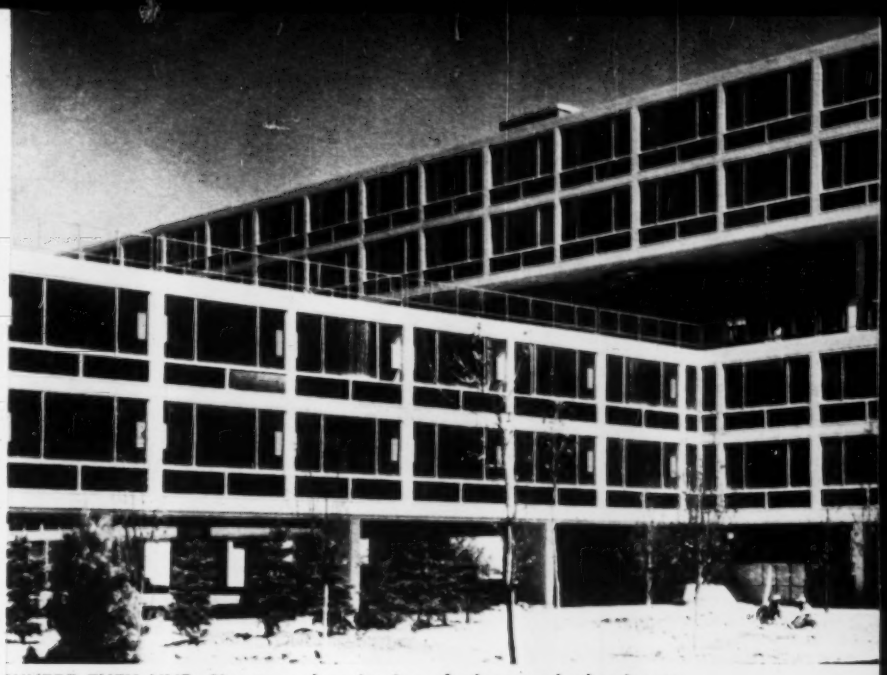
The Academy is being built on a picturesque, but rough, 17,800-acre site in the Rocky Mountain foothills, 8,160 ft above sea level. The designers grouped the buildings on it according to their functions. They laid out and shaped the structures to fit the hilly site and to meet the needs of cadet education with high efficiency. They selected materials and equipment for esthetic reasons and to minimize maintenance. They decided on large windows to take advantage of the magnificent landscape.

"Above all, they tried to create designs that would please the eye, harmonize with each other and complement the inspiring mountain setting.

Planning of the project was keyed to the Academy's mission: to educate, train and motivate young men for lifetime careers as Air Force officers. The

Key to the layout . . .

Photo above shows main academy buildings: academic building (1), dormitory (2), administration building (3), planetarium (4), social center (5), gym (6) and athletic field (7).



WHERE THEY LIVE: Six-story dormitories of glass and aluminum.

. . . INSIDE: Two-man rooms furnished for sleep and study.

Air Cadets

four-year curriculum provides a general education as foundation for further development in any of the numerous career fields open to Air Force officers. Studies are balanced between (1) social sciences and humanities and (2) physical sciences and engineering, including astronautics. Most graduates will take full-scale military pilot training after graduation, but probably not at the Academy.

Congress authorized creation of the Air Force Academy in 1954. It was dedicated July 11, 1955, at a temporary site on Lowry Air Force Base, Denver.

The Cadet Wing numbered 1,160 last fall when it moved into the partly completed facilities at Colorado Springs. Full-size classes of about 700 cadets each will begin entering this year. Within a few years, the Cadet Wing will reach its full authorized strength of 2,520, the same as the Corps of Cadets at West Point.

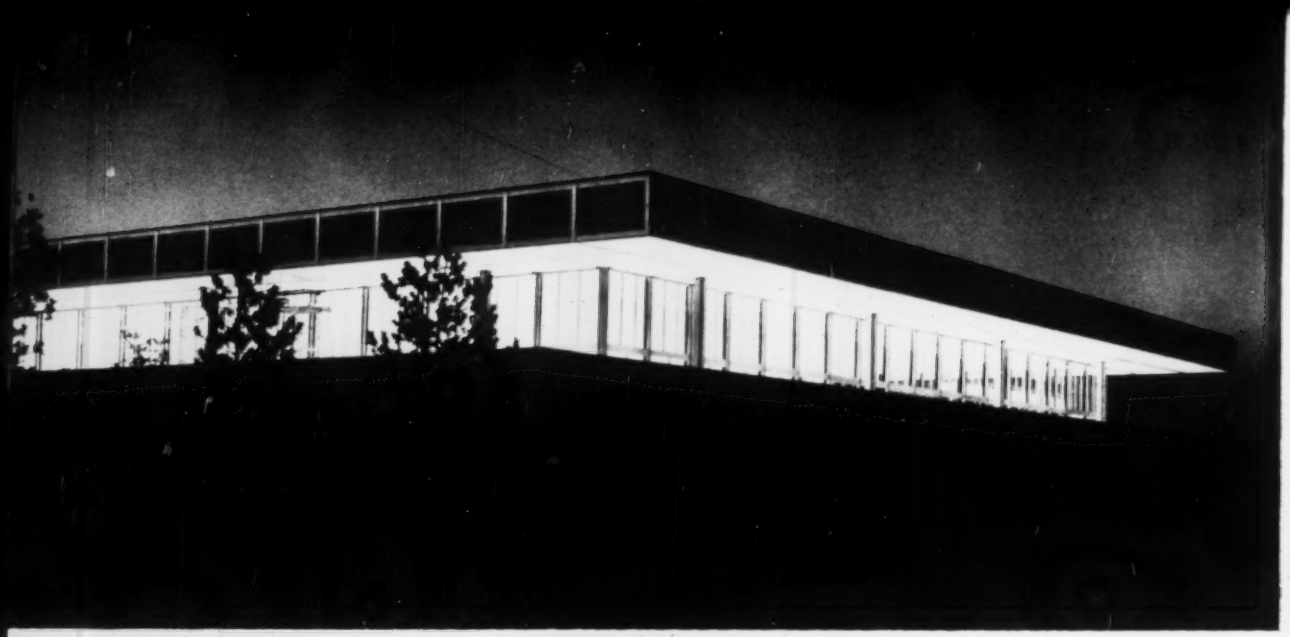
• **Huge, complex project**—To accommodate this student body construction on a vast scale was required.

To prepare the site, which is about seven miles long and five miles wide, contractors had to move almost 15 million cu yd of earth. Roads and utilities had to be put in (ENR March 8, 1956, p. 28) and bridges built (ENR Jan. 9, 1958, p. 43). More than 4 million sq ft of floor area was needed in the buildings—dormitories, houses, classrooms, gym, social center, chapel and central power plant.

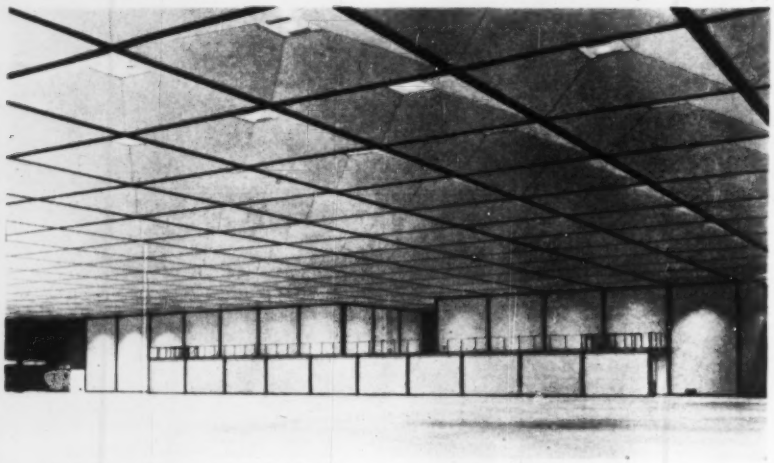
For construction of the facilities, Congress authorized expenditure of $133.5 million. Of this, $19.5 million was spent for planning, design, land acquisition and other items. That left $114 million for actual construction.

To implement the construction program, the Air Force in 1954 set up an Academy Construction Agency. Its major functions were contract administration, preparation of planning and design directives, review of working plans and specifications and supervision of construction inspection. The design was turned over to Skidmore, Owings & Merrill, architects-engineers, Chicago.

(*Turn the page*)



WHERE THEY EAT: Roof rests on 16 peripheral columns, overhangs glass walls; there's room for 3,000 cadets.



. . . INSIDE: Incandescent lamps in coffered metal ceilings.

The designers placed the academic area on a broad natural mesa near the center of the site. Here were built the cadet quarters, cadet store, classroom buildings, library, dispensary, dining hall, administration building, social center and planetarium. The chapel will be erected here too.

Nearby are parade and drill fields, athletic fields and physical education complex. To the north is space for maneuvers and small-arms ranges.

On a mesa to the south are the sites for a hospital, bachelor officers' quarters and an officers' club. To the south of this mesa, in Douglas Valley, are about 600 houses, for the families of officers and airmen assigned to Academy duty, and an elementary school.

Farther to the south are a community center with shopping facilities; support-personnel dormitories, dining hall and physical education building; and in Pine Valley 650 additional houses, and elementary and high schools. A site for a football stadium has been set aside near the eastern edge of the property. (Academy construction funds will not be spent for the stadium or schools.)

To expedite construction of this huge complex of buildings and support facilities, the Academy Construction Agency awarded more than 90 prime construction contracts. In turn, the prime contractors engaged about 500 subcontractors.

By opening day last fall, nearly 70 major building contracts had been completed. To meet the deadline, construction had been pushed during the preceding year at an average rate of $5.7 million per month.

The principal cadet buildings, which are located in the academic area, were substantially completed in time for the fall opening. They are flat-roofed and have walls of glass and aluminum. The design also takes into account their appearance when lights are turned on at night.

The same careful planning that determined the position of the buildings on the site and their exterior design also went into planning the interiors. Let's examine some of the major buildings in detail.

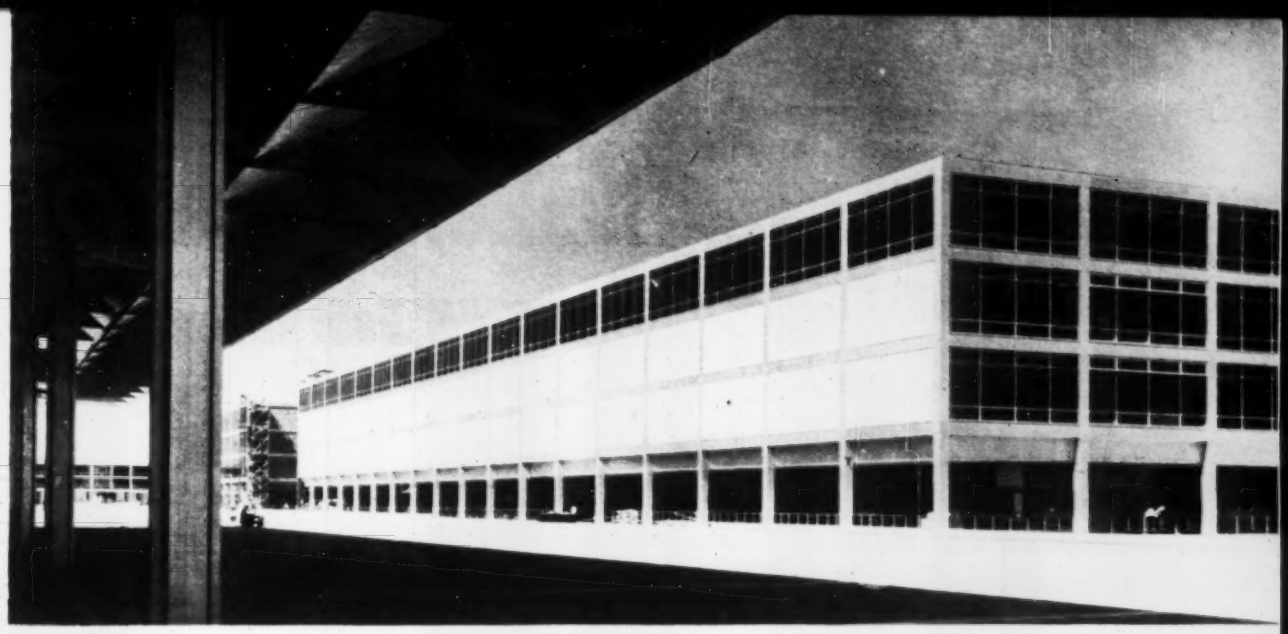
• **Where cadets live**—The cadets are housed in a six-story structure called the Cadet Quarters Complex. It provides 1,320 rooms for 2,640 cadets, two cadets per room, on a squadron basis. It also contains auxiliary squadron rooms, various activity and recreation rooms, store, post office, barber shop, tailor shop and storage rooms.

At campus level, the building is not enclosed with walls; this open floor is used as a cadet formation area in inclement weather. Cadet living units occupy two floors above and below this level. At the bottom of the building is another open floor, which provides access to garden courts and adjacent athletic facilities.

The openness of the three levels below the campus floor was made possible by taking advantage of the steeply sloping site. One long side of the building has three stories above ground, the other long side, facing a valley, has all six stories completely above ground.

The lower portion of the building is 1,339 ft long and 246 ft wide. The upper portion is divided into three separated sections, each encircling a large court.

The building is of flat-plate construction, with reinforced concrete floors and roofs supported on steel columns spaced 28 ft c-c. The columns are hollow rectangles formed by welding to-



WHERE THEY WORK: Two stories of the six-story academic building are below campus level.

gether a pair of channels. Welded to the columns at floor and roof levels are cross-shaped shear-heads composed of steel channels. At their base, the columns are founded on drilled caissons carried down to 10,000-psf bearing.

Because of its great length, the Cadet Quarters Complex is divided into three parts by transverse expansion joints. Each joint is located about 7 ft from a row of columns, dividing the 28-ft bay into two segments. A shelf built into the edge of the 7-ft segment supports the end of the 21-ft segment. Both edges of the slabs at the joint are reinforced with a steel angle, and a graphite sheet is placed between the bearing surfaces to reduce friction. This method eliminated the need for double columns.

The two-man rooms are furnished with two beds, desks, wardrobe and storage units, bookcases and a lavatory. Toilets and showers are outside, usually located at corridor junctions.

Floors in the cadet quarters are finished with vinyl-asbestos tile. Interior walls are surfaced with a sand finish plaster. General illumination is provided by incandescent lamps in the rooms, fluorescent in corridors.

The building is heated by a zoned, medium-temperature, forced hot-water system. The hot water is fed to continuous, finned-tube radiators installed along outer walls at the sill. Manual valves control temperatures in each room. For supplementary heating, hot-water pipe coils were embedded in the concrete floors above the stories not enclosed with walls. The rooms are ventilated by opening sliding aluminum windows.

. . . INSIDE: No windows, air-conditioning, luminous ceilings.

• **Where cadets eat**—Cadets dine as a group in the Cadet Dining Hall. From campus level, this square building appears to be one-story high (35 ft). Its roof overhangs the steel columns that support it and also projects beyond the glass walls that enclose the floor at campus level.

The roof is 308 ft square. But the columns lie along the sides of a square 42 ft smaller, and the glass walls enclose a square 56 ft smaller.

The main dining room, with a 24-ft clear ceiling height, is at campus level. This terrazzo-floored area and a mezzanine dining deck along one side of it for senior personnel and guests are completely free of columns, thanks to the long-span roof.

Under the mezzanine are serving, scullery and dishwasher facilities and a kitchen.

A service floor is 18 ft below the dining floor. It provides space for freezers and food storage, bakery and employee facilities. At this lower level also are loading docks and other food-receiving departments.

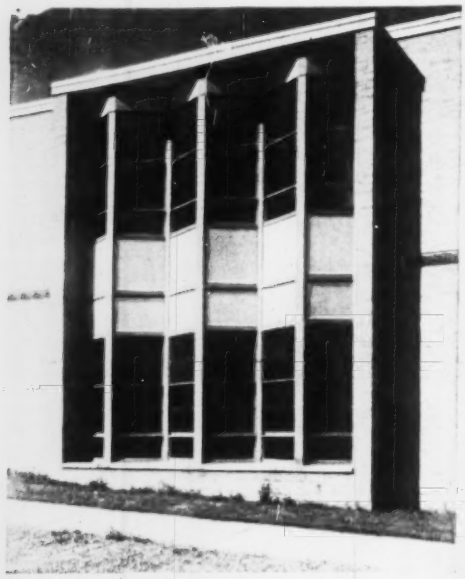
Below campus level the dining hall is of reinforced concrete construction. Above, structural steel is used, the roof being supported by only 16 columns. Roof framing consists of steel Warren trusses spaced 14 ft c-c in both directions. It was fabricated on the ground and jacked into place (ENR Jan. 23, 1958, p. 26).

Incandescent lighting is used throughout the building. In the dining area, it consists of high-bay units. These are centered in coffered metal ceiling panels set in the 14-ft truss grid.

For heating and ventilating, the dining area is served by three overhead warm-air systems. These can be operated at 100% recirculation or with various percentages of outside air up to 100%, totaling 90,000 cfm. Heat loss through the 22-ft-high, glass exterior walls is compensated for by a separate

The Newer Schools

TRUSCON'S Fast, Economical

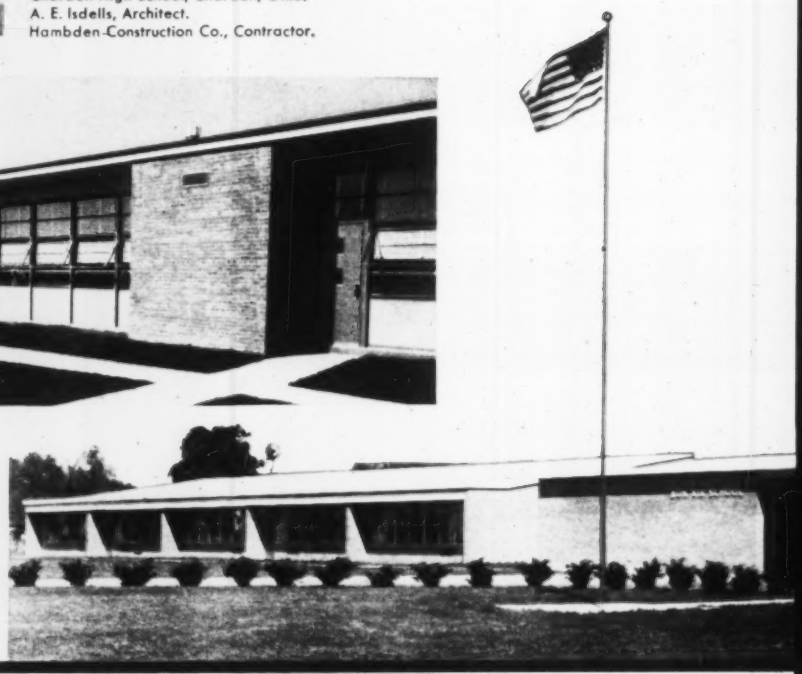


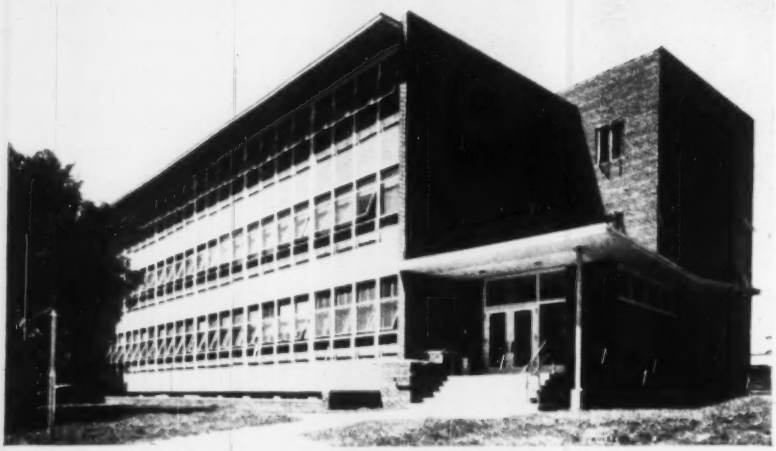
HIGH SCHOOL

Chardon High School, Chardon, Ohio.
A. E. Isdells, Architect.
Hambden-Construction Co., Contractor.

PAROCHIAL SCHOOL

St. Jude's, Wheaton, Md.
Johnson and Boutin, Architects.
Victor R. Beauchamp Associates, Inc.,
Contractor.





ELEMENTARY SCHOOL

Bon Air School, Kokomo, Ind.
Perkins and Will, Architects.
Glaser and Glaser, Inc.,
Contractor.

COLLEGE

Farleigh Dickinson College,
Teaneck, N. J.
Engineering Science Building
Fellheimer and Wagner,
Architects.
Frank W. Bogert, Contractor.

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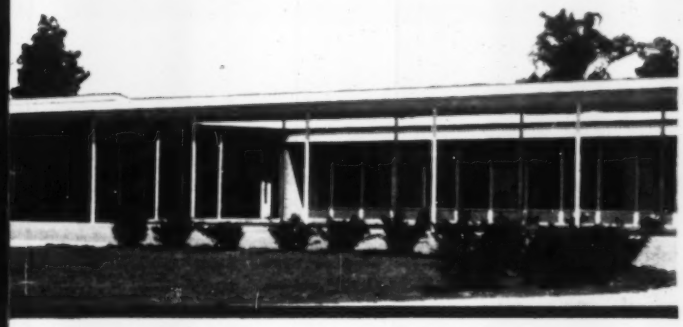
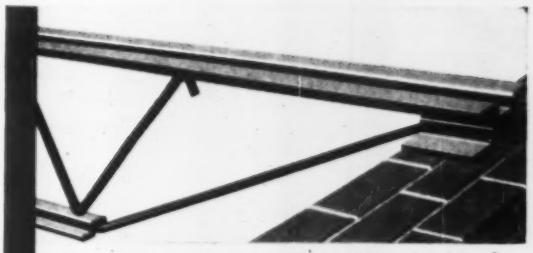
Big feature of Truscon's Vision-Vent Window Wall is its complete *flexibility*. You can select practically any type of window—double-hung, architectural projected, intermediate projected, you name it. Arrangement of fixed lights, operating lights, insulated panels is completely interchangeable. Choose either steel or aluminum.

Truscon's new Supercoat Finish also available in colors. Supercoat is the amazing factory-applied painted surface that eliminates all field painting of steel window walls, staves off maintenance painting for many a year.

Good insulating value, fire-resistance, economy, ease and speed of erection, superior daylighting and ventilation are other Vision-Vent advantages. And, Vision-Vent blends beautifully with all other construction materials.

Where you are faced with too-high costs and too-low budgets, consider building around Vision-Vent. Send coupon for facts.





New, stronger, more versatile Truscon "O-T" Open Truss® Steel Joist now designed and engineered to 20,000 psi working stress. Balances with all other structural components. Certified by the Steel Joint Institute. Send coupon for facts.

Republic Steel Lockers now Bonderized to take and to keep a finer enameled finish. Made by Republic's Berger Division, these high-quality school lockers will retain their good looks in spite of generations of exuberant high-schoolers. All locker sizes, styles. New, improved handle. Complete planning, engineering, installation service. Send coupon.

Truscon Hollow Metal Doors for most satisfactory service in high-traffic school locations. Bonderized to take and hold a fine painted finish. Can't warp, swell, sag, shrink. Smooth, modern, flush design. Sizes and styles for every interior, exterior application. Complete with frames, choice of hardware. Send coupon.

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What the Key Academy Buildings Cost

Building	Major Contract	Total Cost	Cost Per Sq Ft
Cadet Quarters Complex	Robert E. McKee, General Contractor, Inc., Santa Fe, N. M.	$15,972,000	$17.50
Academic Complex	Farnsworth & Chambers, Houston, Texas	22,111,000	23.00
Administration Building	T. C. Bateson Construction Co., Dallas, Texas	3,034,000	27.40
Cadet Dining Hall	Dondlinger & Sons Construction Co., Wichita, Kan.	4,079,000	31.30
Physical Education Complex	T. C. Bateson Construction Co., Dallas, Texas	7,529,000	25.30
Air Base Headquarters	Dondlinger & Sons Construction Co., Wichita, Kan.	652,000	19.10
Base Exchange Complex	J. W. Bateson Co., Inc., Dallas, Texas	2,609,000	22.40

system: Air is discharged upward from the base and downward from overhead.

Air from the dining area is relieved into the kitchen area. The kitchen is ventilated through exhaust hoods. Service areas on the lower floor are mechanically supplied and exhausted.

The cold-storage plant is a single-suction Freon system. It employs a single back-pressure valve to control suction pressure to the higher temperature areas.

• **Where cadets study**—Main element of the education facilities on the Air Force Academy campus is the Academic Complex. It contains 168 science and humanities classrooms, plus laboratories, lecture halls, library, dispensary, and office space for the Commandant of Cadets and staff.

The building has four stories above campus level and two below. Advantage was taken of the sloping site to keep all sides of the structure completely exposed. Along one side, which is nearly 800 ft long, a wide areaway, cut below campus level, admits light and air to the two bottom stories. Bridges cross the areaway at campus level to provide access to two entrances.

The lower portion of the building is 786x282 ft. The portion above campus level is divided into two separated sections, one of which encloses a large court. The library and facilities for the Commandant of Cadets are in a separate wing.

Founded on drilled caissons, the Academic Complex has structural steel framing with columns 28 ft c-c. Floors are metal-pan lightweight concrete construction; they have concrete joists spanning the 28 ft between steel girders. In some portions of the building where it was necessary to omit a line of columns, 56-ft shallow, welded steel trusses span the gap.

As was done for the Cadet Quarters Complex, double columns were eliminated at the four expansion joints needed in the long Academic Complex, but by a different method. At the joints, girders are supported on rockers, which will permit movement due to temperature changes. The rockers are seated on brackets attached to the columns.

Fluorescent lighting is used throughout the building except in the first story. Luminous ceilings supported on aluminum grids provide 50 ft-c in the classrooms. Fluorescent lamps in continuous troffers light the corridors.

The Academic Complex is completely air conditioned. It is served by five different systems: single-duct, medium-pressure; dual-duct, high-pressure, high-velocity; high-velocity, high-pressure, with perimeter induction units; conventional-velocity, with reheat coils; conventional velocity, with face and bypass dampers around the heating coil, or a multizone system.

Cooling is accomplished with a circulating, chilled ethylene-glycol loop and two 700-ton absorption units.

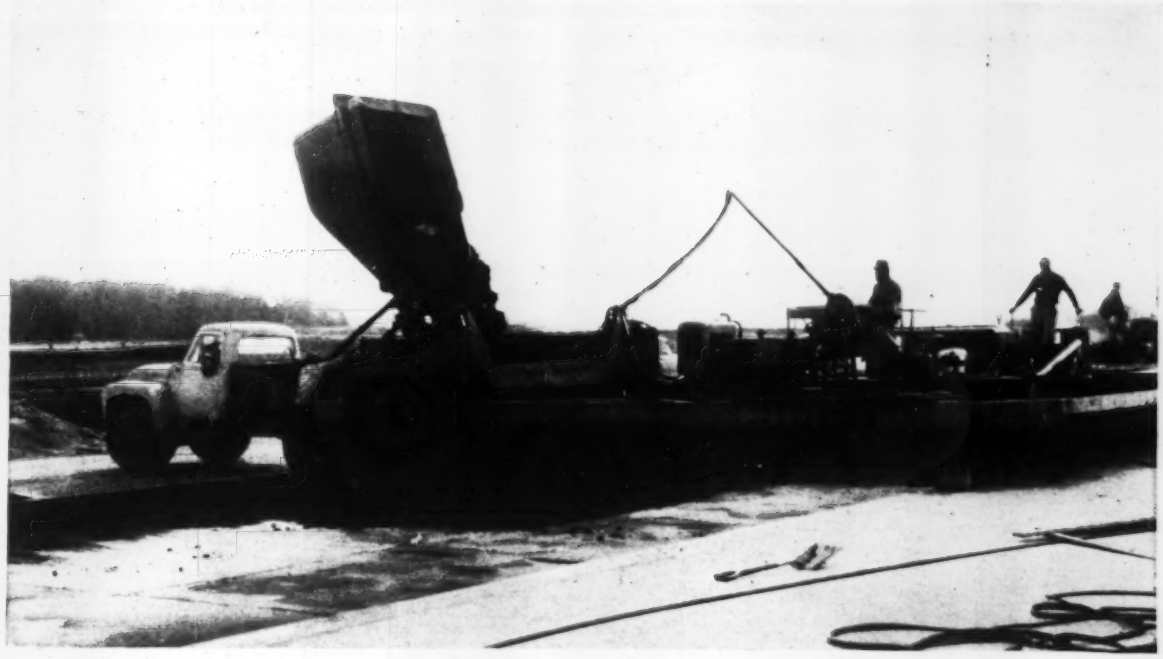
• **Where cadets exercise**—Another important education facility on the Air Force Academy campus is the Cadet Physical Education Complex. Like the dining hall, it appears from campus level to be one-story high, but it has several floors below that level.

The portion of the building above campus level is 534x226 ft. It houses three large basketball areas with four courts in each, a boxing area, gymnastic area, 212x56-ft swimming pool and bleachers.

The portion below campus level is 534x282 ft. It provides space for a smaller swimming pool, wrestling room, handball and squash courts, pistol and rifle ranges, lockers, showers and storage

(*Turn to page 44*)

RUNWAYS or HIGHWAYS



The Maxon Dumpcrete Concrete Spreader pays off in Higher Production for Airport Paving with its 90-second cycle!

How much time and labor could you save on paving jobs with a spreader that can place a 12′ concrete slab to full width every 90 seconds?

That's just the base placing rate of Maxon Dumpcrete Concrete Spreaders. Both single-lane and full-width models will load in 30 to 60 seconds with the fast Dumpcrete body—spread in 15 seconds—move-screed in 15 seconds.

And Dumpcrete Spreaders will place full depth, base course or top course . . . in widths adjustable from 11 to 25 feet . . . handling concrete of the lowest workable slumps.

Maxon developed the hydraulically controlled Dumpcrete Spreader to take full advantage of the benefits of central mixing with non-agitated hauling. Pair the Spreader with Dumpcrete trucks and you've got a high production team that cuts time and labor costs to the bone.

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PAYLOADER® versatility

with Vibratory Compactor

Substitute this Galion Vibratory Compactor attachment for the bucket and your PAYLOADER becomes an economical and efficient tool to develop specified densities in all types of granular soils. Whether used in new construction, resurfacing or patchwork, high PAYLOADER maneuverability permits working in extremely close quarters where other units can't operate.

The compactor consists of four 30-in. shoes that provide a total compaction width of 10-ft. Each shoe, powered by a separate electric motor, delivers from 3,600 to 4,200 three-ton blows per minute. Shoes may be removed for manual operation.

No other tractor-shovel comes close to matching the wide selection of useful, interchangeable attachments available for a 4-wheel drive PAYLOADER — real working tools that *save time* on-the-job and the *high cost* of special one-purpose machines. And because a PAYLOADER travels anywhere under its own power, it handles many scattered jobs in a single day to multiply versatility even more. See your nearby Hough Distributor for complete details.

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. . . Air Force Academy

rooms. This part of the building is of reinforced concrete construction.

Above campus level, the building has structural steel framing. The roof is carried by welded trusses spaced 28 ft c-c and spanning 112 ft. Steel purlins spaced 7 ft c-c span between trusses and carry a precast, lightweight concrete deck.

Exterior walls are of cavity construction. The interior wythe is structural facing tile; the exterior, concrete block with a facing of aluminum and marble. Most of the interior partitions are structural tile.

Basketball, boxing, wrestling and swimming areas are lighted by direct, rapid-start, high-output fluorescent lamps. Similar lamps, in recessed troffers with a plastic lens bottom, illuminate squash and handball courts.

Heating in corridors and most areas with outside walls is accomplished with hot liquid fed to finned-pipe radiation and unit heaters. Water at 110F is supplied to panel-heating coils in the floors of the natatoriums. Water at 210F is circulated to unit heaters, heating and ventilating units and booster coils. And medium-temperature water at 250F, generated in high-temperature water converters, is circulated to ethylene-glycol converters. The ethylene-glycol solution at 210F, in turn, is circulated to ventilating units and preheat coils between the roof trusses.

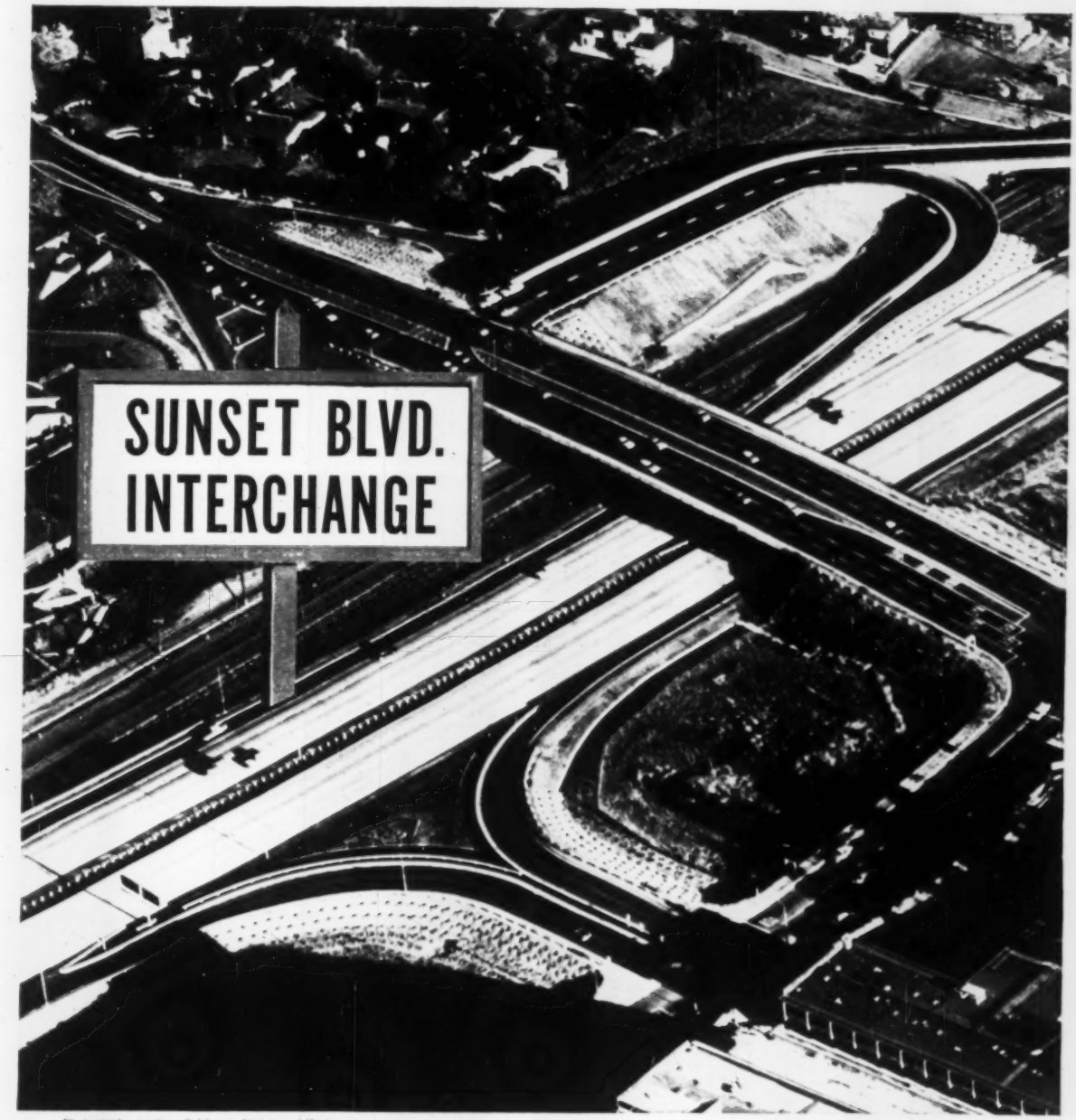
Controls permit two levels of humidity to be maintained in the natatoriums, one for training or classroom occupancy, the other, or lower level, for spectator occupancy.

In addition to the buildings for living, dining, working and exercising, the cadets will have a recreation building—the Cadet Social Center Complex. This 476x308-ft steel-framed building has a theater with a seating capacity of about 3,000, ballrooms, reception room, game room and bowling alleys. Nearby, Academy administration is headquartered in a multistory, steel-framed 532x58-ft building.

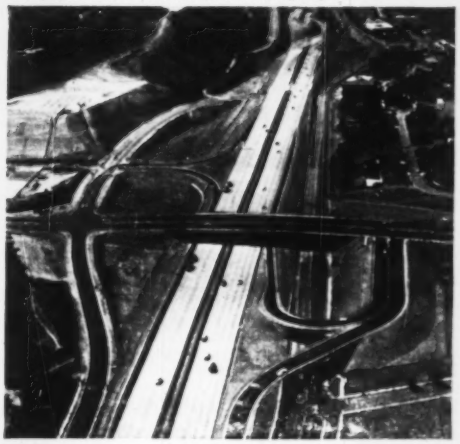
Costs per sq ft for some of the larger buildings are given in an accompanying table. Unit prices were published, without identification of the project, in ENR March 20, 1958, p. 194.

Col. A. E. Stoltz was director of the Air Force Academy Construction Agency until late last year, when he retired. Col. James A. Barnett replaced him.

C. L. Tyler and E. A. Merrill were general manager and director of engineering, respectively, for the Colorado Springs office of SOM during the major construction phase. Mr. Merrill is now acting in both management and engineering capacities. Walter A. Netsch, Jr., was director of design for SOM.



Photographs courtesy California Division of Highways



STAY ON SCHEDULE WITH *Reinforced Concrete*

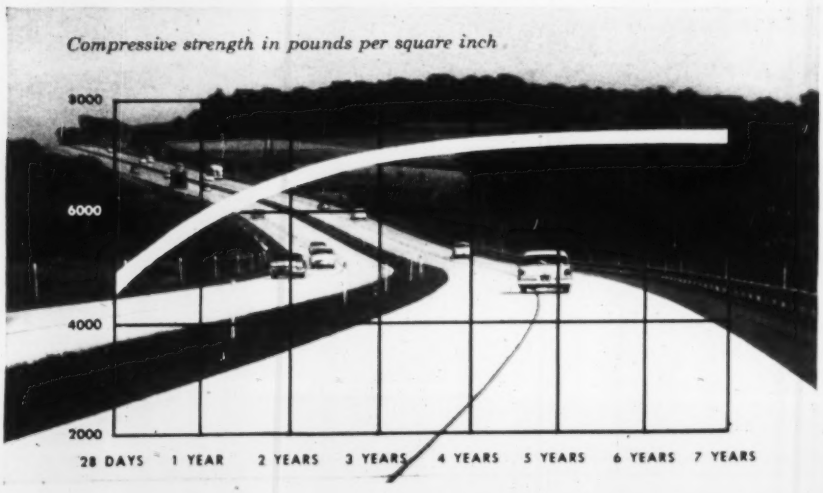
Although the national roadbuilding program is in high gear, there are still many rivers to bridge . . . many freeway interchanges to build. Reinforced concrete is playing a major role in this vast construction undertaking. Reports from many important projects, such as the Sunset Boulevard Interchange on the San Diego Freeway in Los Angeles, indicate that more and more highway engineers find they can count on their bridge and separation structures being "completed on time" when they design for reinforced concrete.

Concrete Reinforcing Steel Institute

38 South Dearborn Street Chicago 3, Illinois

Only CONCRETE

On the Pennsylvania Turnpike concrete shows a rising curve of strength year by year. Seven years ago, 90-day cores from the eastern extension tested an average compressive strength of 5,068 psi. Latest cores from same locations show an average compressive strength of 7,226 psi. An impressive strength gain of 29%!



roads automatically provide 100% added strength for lasting load-bearing ability!

Laid flat, concrete stays flat. Traffic rides smooth and steady . . . travels fast and far.

Modern concrete is the *engineered* pavement . . . designed mathematically to specific wheel load requirements. When you work to accepted design practice, you get a pavement that can support twice the rated axle load . . . a 100% margin of strength.

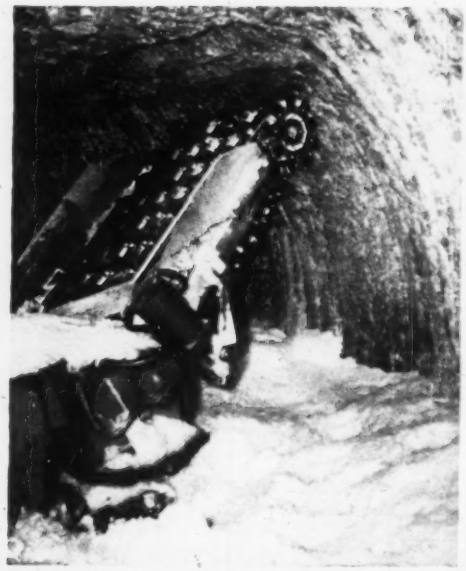
That's why concrete will stand up not only to rated axle loads in *normal* volume, but even in *peak* volume, with such loads running bumper to bumper . . . and last an expected 50 years and more. Reserve strength like that saves taxes and complaints. It's a big reason why upkeep costs will run as much as 60% lower than for flexible pavement.

Concrete often saves money in other ways, too. For example, on the Indiana Toll Road, engineers drew up designs for both types of pavement, proved concrete would save $9,740,000.

And truckers are the experts who can tell you that today's concrete means gentle treatment of cargoes. It's the flattest, smoothest-riding pavement there is. Small wonder concrete is the preferred pavement for the Interstate System and other heavy-duty highways.

PORTLAND CEMENT ASSOCIATION *A national organization to improve and extend the uses of concrete*

This 1,150-ft ice tunnel was dug by a . . .,



mechanical coal miner.

The machine cuts the ice and automatically loads it on conveyor belt.

Corps Digs a Tunnel Under Arctic Ice Cap

With machinery more familiar to West Virginia than to the Arctic, the U. S. Corps of Engineers has carved a new, 1,150-ft experimental ice tunnel under the Arctic Ice Cap in Greenland.

The tunnel is the second built in the Ice Cap for the Army's Snow, Ice and Permafrost Establishment (ENR Feb. 7, 1957, p. 28). The new tunnel entrance is about 60 ft higher at the edge of the Ice Cap than the previous one and is 110 ft below the cap's surface.

By building the tunnel higher, scientists hoped to reduce closure caused by the gradual movement of ice. With less pressure nearer the surface of the Ice Cap, they expect the closure rate to be cut to about six inches per year.

To dig the tunnel, Army personnel used a continuous coal miner, a machine that cuts the ice and automatically loads it on a conveyor belt.

The new tunnel is about a mile from Camp Tuto, summer headquarters for the Army's Polar Research and Development Center. The entrance is 15x15 ft. The tunnel ramps upward, narrowing to 7½ ft in height.

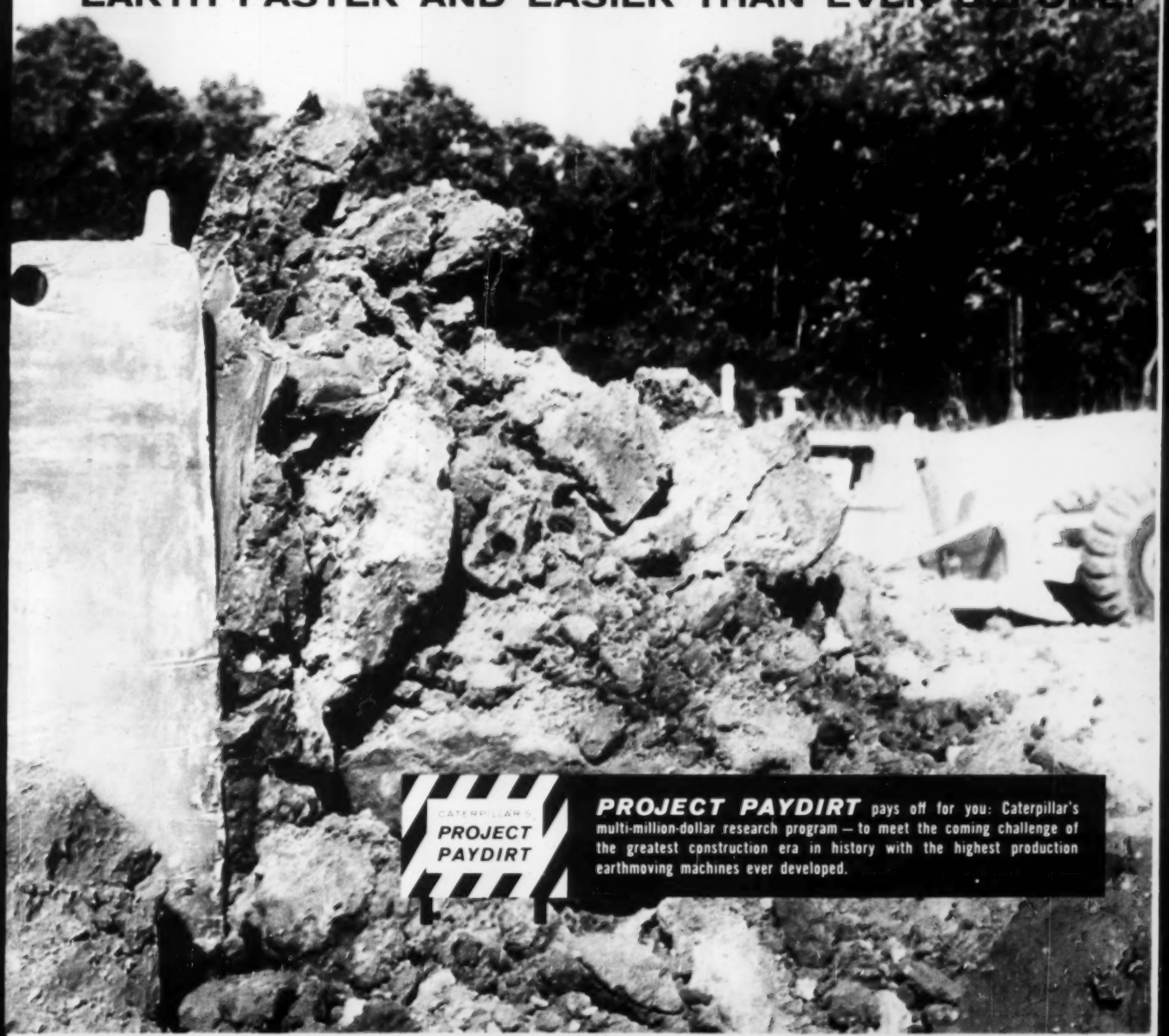
Three rooms, now 7½ ft high, 21 ft wide and from 200 to 300 ft long, are reached by connecting tunnels extending from the main tunnel at 45 deg angles.

Additional rooms will be built next summer and the ceilings of the main tunnel and the rooms will be raised to 15 ft.

The tunnel will eventually house an experimental camp with living quarters, supply dumps, shops, offices and even a motor pool for Army trucks and equipment will be under the Ice Cap.

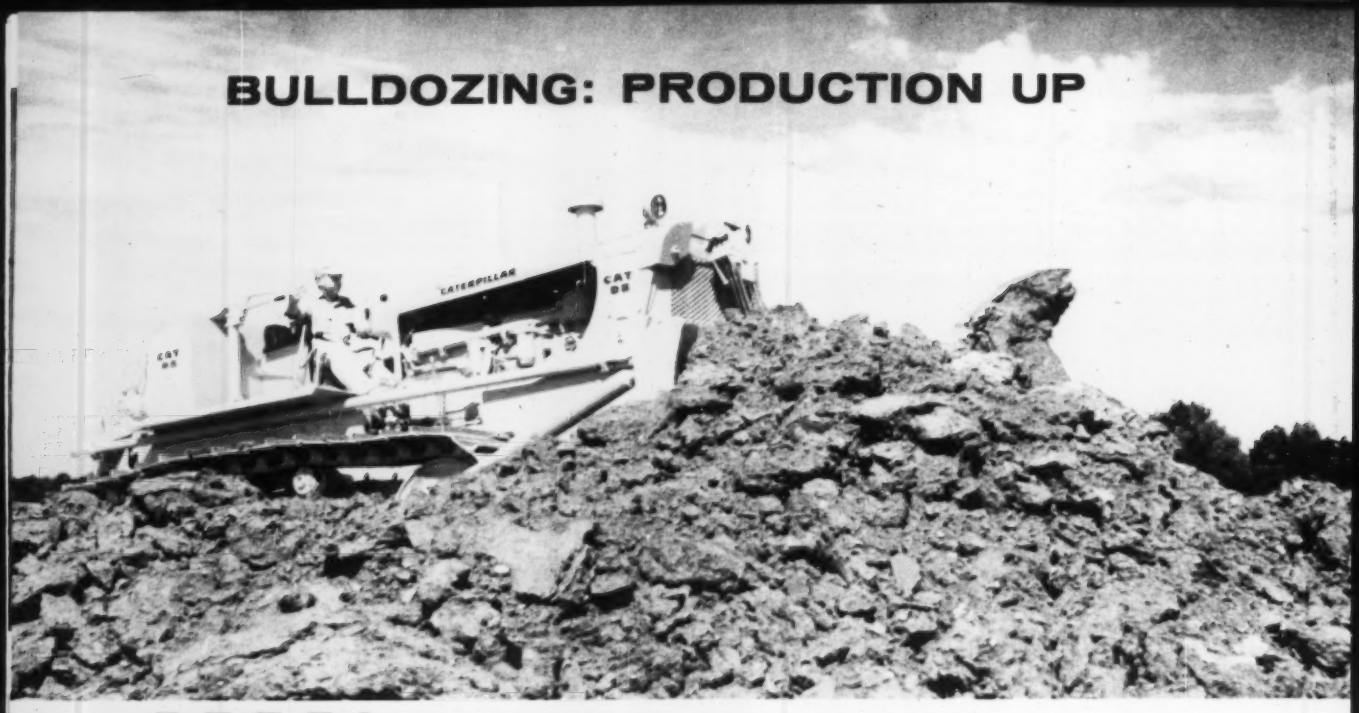
NEW CAT D8 SERIES H TRACTOR

MORE HORSEPOWER—NEW FEATURES TO MOVE EARTH FASTER AND EASIER THAN EVER BEFORE!



PROJECT PAYDIRT pays off for you: Caterpillar's multi-million-dollar research program — to meet the coming challenge of the greatest construction era in history with the highest production earthmoving machines ever developed.

BULLDOZING: PRODUCTION UP



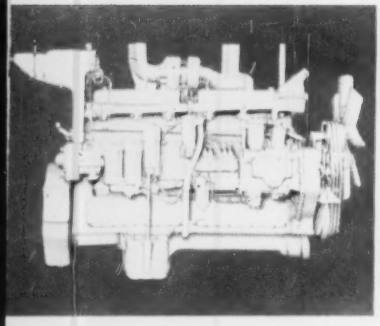
CATERPILLAR'S
PROJECT PAYDIRT

FIELD TESTS PROVE GREATLY

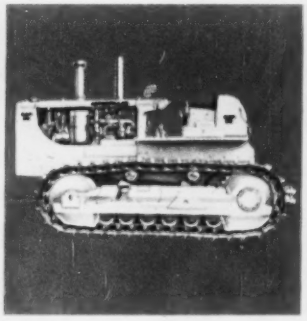
The new Caterpillar D8 Series H Tractor is ready *now* to increase its lead as undisputed king in its size class. A major achievement of Caterpillar's all-out research program, "Project Paydirt," the new D8 has been proved through a rigorous field testing program.

The D8 Series H is new in design, appearance and performance. It is bigger, more powerful. It incorporates dramatic new engineering advances. It is easier to operate. It is faster.

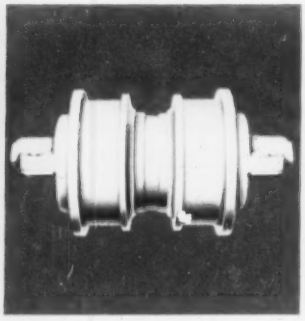
On these pages you can see some of the *big* advances the D8 has made. But there are hundreds of other major improvements, too. For example, the transmission, bevel gear and steering clutches have *one* lube system, and it uses SAE 30 engine oil instead of special



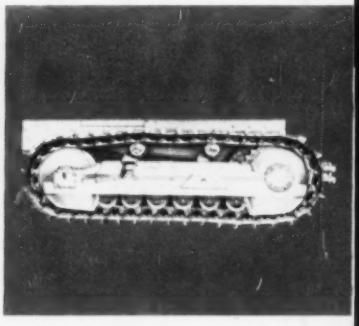
Horsepower increased 18%. The horsepower of the new D8 is up from 191 to 225 at the flywheel, from 155 to 180 at the drawbar. In addition, engine torque rise now is 20%, an increase of one-third. Over-all engine performance has been greatly improved by the addition of a turbocharger.



Size increased. To make effective use of the new horsepower, over-all weight of the tractor has been increased 4,400 lb. to a total of 47,000 lb. At the same time the gauge has been increased to 84 inches, track on ground lengthened to 114 inches, square inches of contact increased to 5,505.



Lifetime lubricated rollers and idlers. That's right — lifetime! In a major research breakthrough, Caterpillar has achieved track and carrier rollers and idlers that never require further lubrication until rebuilding. And service life is hundreds of hours longer than with ordinary rollers.



New, stronger, heavier undercarriage. Every component, such as frames, links, braces, pins, bushings, shoes, has been made stronger by the use of improved materials and heat treat processes to provide longer life. And ground clearance has been increased 50% to almost 20 inches, greatest in the D8 class.

PUSHLOADING: PRODUCTION UP

INCREASED PRODUCTION WITH NEW D8

oils for each. In fact, the D8 is the only tractor in its class to have its entire power train pressure lubricated with completely filtered oil. And there are three brand-new, high-output hydraulic controls for the D8—Nos. 143, 165, 176. The list of improvements is impressive. Add them up, and you can see why the new D8 is the most advanced tractor in its size class.

You—what can the D8 do for you? Here's the answer:

The Series H (available in direct or torque converter drive, according to your requirements) has been thoroughly field tested. A number of the big new tractors have been at work constantly in every kind of material on every kind of job. The statistics developed during these extensive tests prove conclusively that both bulldozing and pushloading production figures are *up*.

This means that you can move dirt faster and easier than ever before with a tractor in this size-class. You get higher production, bigger profit—yet the big new D8 Series H has actually proved *more economical* to own and operate!

But find out for yourself. Get the full story from your Caterpillar Dealer, all the eye-opening facts and figures that can only be touched on briefly here. Then *see* this great new machine at work on your operation as soon as possible! You can't afford not to.

Dry-type air cleaner. Here's still another major Caterpillar research development on the new D8 — the new dry-type cleaner which removes 99.8% of dirt in the intake air, even under severe operating conditions. The new cleaner can be serviced in 5 minutes, costs a good deal less to use.

Superior operation. Operator visibility is excellent because of higher deck and changed seat position. Console-type controls make operator's job easier. And on torque converter models, standard foot-operated decelerator can override hand throttle — free operator's hands for other controls.

TWO MORE IMPORTANT OPERATOR CONVENIENCES

Higher speed. Completely new, long-life, direct drive transmission provides six speeds forward and six reverse. High speed has been increased to 6.3 MPH forward, 6.4 reverse to reduce cycle time. Operator can shift from any forward gear into a similar reverse gear (or vice versa) by simply moving the forward-reverse lever.

Dependable oil clutch. By contractor and operator demands, the virtually service-free, easy-to-operate oil clutch has been retained in the new D8. Another important Caterpillar exclusive.

CATERPILLAR
PROJECT
PAYDIRT

Multi-million-dollar research program pays off for you in every piece of Caterpillar equipment

The completely new D8 Series H you have just seen is dramatic proof of the power of Project Paydirt to give you the most modern, productive earthmoving equipment in the world. But this new tractor is just part of a continuing story.

Vast research and development facilities, the most extensive in the industry, bring improvement upon improvement to every piece of Caterpillar equipment. LOWBOWL Scrapers have revolutionized scraper design; the exclusive oil clutch has set new standards of long life.

Whether it's a better way to heat treat a bolt head, the Torsionflex Seat for operator comfort, or redesigning a tractor-scraper combination—nothing has been overlooked to increase the efficiency of Caterpillar machines.

Full Line Helps You Increase Production—Here's the line-up that's waiting at your Caterpillar Dealer to help you to more productive earthmoving.

Track-type Tractors—Besides the new D8, there's a full line of other Cat track-type Tractors ranging from the massive D9 (320 HP) to the smallest—the 63 HP D4. A full range of 'dozers (including the amazing Gyrodozer for D7 Tractors), scrapers and rippers expands the working applications of these tractors.

Traxcavators—The three Cat-built Traxcavators can fill your needs for a front-end loader because they're designed from the ground up for that purpose. Bucket capacities range up to 2¼ cu. yd. All Traxcavators can be equipped with the exclusive Side Dump Bucket, or other special buckets, teeth, 'dozers or forks.

Wheel-type Tractors—Caterpillar wheel-type Tractors feature speed, power, four or two wheel options, plus the exclusive, matching LOWBOWL Scrapers. These rubber tired combinations have an unequalled record for profitable earthmoving production.

Motor Graders—The No. 12 and No. 112 Motor Graders, both available with Preco Automatic Blade Control that maintains blade accuracy of ½" in 10', have the versatility to solve construction and maintenance grading problems quickly, efficiently and easily.

Your Caterpillar Dealer is ready *now* to supply the finest equipment for earthmoving. He backs what he sells with dependable parts and service. See him today.

Caterpillar Tractor Co., Peoria, Ill.; San Francisco, Cal., U.S.A.

CATERPILLAR

Caterpillar, Cat and Traxcavator are Registered Trademarks of Caterpillar Tractor Co.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

BORN OF RESEARCH
PROVED IN THE FIELD

This coking plant will produce 500,000 tons a year.

Prefabrication helps speed construction of mill offices.

Red China Pushes Steel Center

Red China claims that construction of the huge Paotow iron and steel complex is going ahead at full blast despite subzero temperatures.

Paotow, in northwest China, used to be a trading center for the Moslems and Chinese before the Japanese moved in to build a steel industry during their occupation of Manchuria. Red China took over the area after the war. Now, with technical help from Russia, the Chinese are trying to make it into one of the biggest steel centers in the country.

Peking radio says over 10,000 tons of iron and steel have already gone into the structure and equipment of the mill. An automatic blast furnace, to be completed in October, will reportedly have an annual capacity of 4 million tons. Open-hearth furnaces under construction at the plant are rated as the world's largest by the Chinese. A coking plant will produce 500,000 tons a year.

Rebuilt Hedjaz Railway Planned by Arab Nations

Saudi Arabia, Jordan and Syria, the three nations interested in rehabilitation of the Hedjaz Railway, are expected to make a final decision soon on an offer from an international consortium to rebuild the line between Ma'an, Jordan, and Medina, Saudi Arabia.

The 500-mile Ma'an-Medina section of the Hedjaz Railway has been out of commission since World War I, when much of it was destroyed by Col. T. E. Lawrence and his Arab troops.

The consortium recently proposed to arrange the financing and construction of the railway on condition that a contract be negotiated exclusively with it. The group, known as "Intravi," is made up of 25 European construction and heavy equipment firms.

Several past efforts to rehabilitate the railway failed because of financial difficulties. Intravi reportedly has offered to finance and complete the project within two years and be repaved in 10 to 12 annual installments. The work is expected to cost about $25 million.

Brown Engineers International, New York, the engineering member of IREX (International Resources Engineering and Exploration Group), Washington, D. C., consultants to the three-nation committee, made a survey of the project in 1956. The firm recommended keeping the existing 105-cm gage for the line and replacing the original rails to accommodate modern locomotives.

About 50 international firms are said to have answered the call for bids early last year, even though the three-nation committee handling the project demanded that contractors also arrange their own financing. The Intravi bid was retained after the committee had postponed three times the deadline for presentation of the offers.

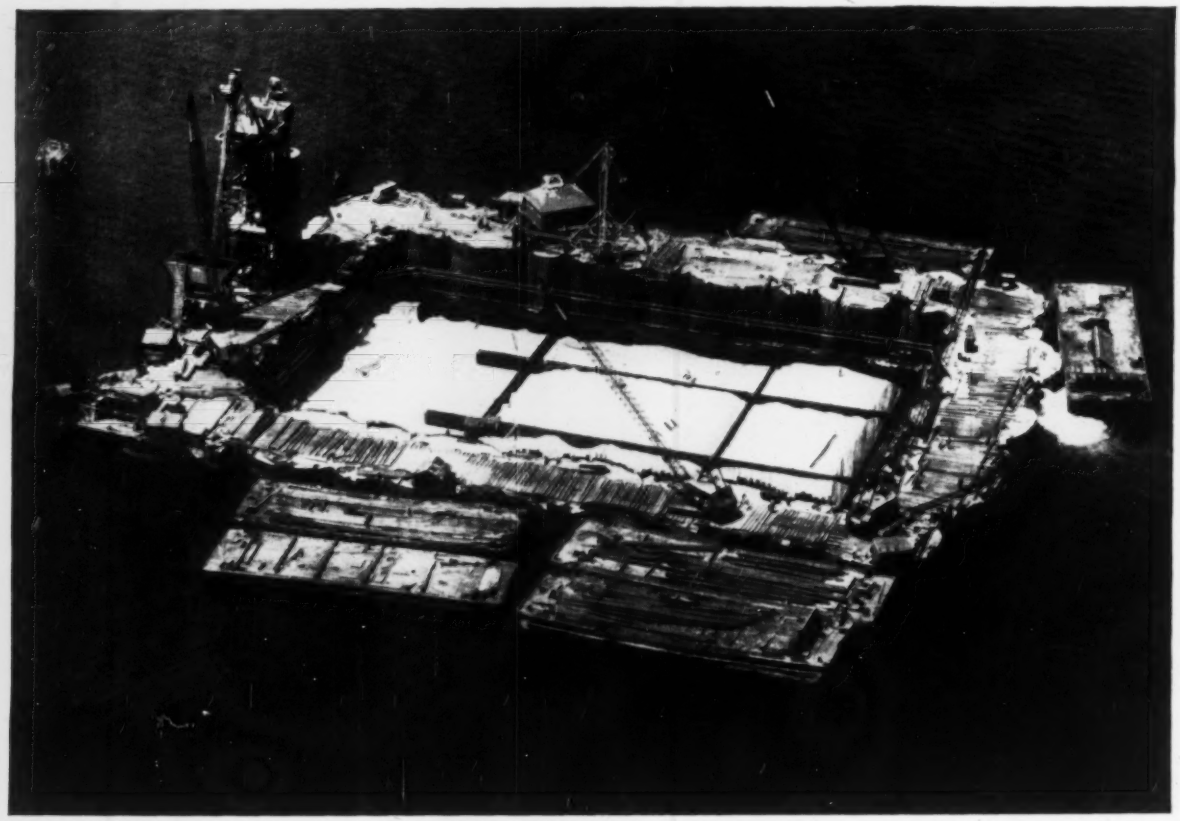
Plan North Sea Island For Flood Control Study

A Texas-tower-type artificial island might be built in the North Sea as a base for sea and air studies. Holland has organized an international effort to get the project going.

The platform-on-stilts would be used for scientific studies of wave action in connection with flood prevention. On the platform would be a five- or six-story building, radio antennas and meterological instruments. Included would be a laboratory, library, engine room and living quarters.

HOW TO HANDLE WET JOBS

Project: Queens Anchorage, Throgs Neck Bridge, New York City
Contractor: Steers-Snare, *a joint venture*
Engineers: Ammann & Whitney



Sinking of huge bridge caisson speeded after wellpoints . . .

Dewater Man-Made Island 30 ft Below River

In order to sink this giant caisson a cofferdam-enclosed sand island was required. (See photo). Confident that wellpointing would result in a time and money-saving operation, Steers-Snare built the island not up to river level (which was the preliminary plan) but 25 ft below.

• **This greatly reduced** the yardage of sand fill, thereby eliminating additional excavation later on. However, Griffin engineers were confronted with a difficult dewatering job, since investigations indicated many unusual problems of soil mechanics, hydraulics and stability.

• **Solution? A specially designed** Griffin wellpoint system which attained absolute control of ground water and uplift pressure and insured the stability of the cofferdam.

GRIFFIN WELLPOINT CORP.

SALES • RENTAL • CONTRACT

GENERAL OFFICE: 881 East 141st St., New York 54, N. Y.

Branches: Jacksonville, Fla. • West Palm Beach, Fla. • New York, N. Y. • Hammond, Ind. • Houston, Tex.
In Canada: Construction Equipment Co., Ltd., Toronto • Montreal • Edmonton • Vancouver
In Venezuela: Drew Bear & Sons C.A., Caracas • Maracaibo

AED's president, F. J. Fitzpatrick, has some answers and . . .

He's Willing and Able to Teach

Members of the Associated Equipment Dealers can expect 1959 to be a very educational year—for themselves, for their employees and for their clients.

Members can expect to learn more about how to up their profit ratios; their employees can expect to learn more about their jobs and products; and equipment buyers can expect to learn more about the value of used vs. new machinery.

Education in these matters will be the major goal of AED's new president, F. J. Fitzpatrick, who can teach from a vantage point of 28 years near the top of the equipment business. And there's no indication that Mr. Fitzpatrick has yet found a major business goal unattainable.

That's not to say he's successful at every undertaking.

Mr. Fitzpatrick himself is the first to admit, for example, "I'm a duffer at golf." He shoots about 100. "But I don't play much, no more than once a week."

He does slightly better relaxing indoors, however. "I break even at gin rummy."

But in business, it's been a long time since he's just broken even.

That was back in the depression years when the Parker-Danner Co., which Mr. Fitzpatrick formed in 1931 in partnership with A. B. Parker and William Danner, was just getting started.

The small business rocked along without showing a measurable profit until 1935.

Last year, the Boston-based firm had nearly $4 million in sales. It employs 80 persons in six branch offices throughout New England.

Those thin early years, and the years of growth since, have left Mr. Fitzpatrick with strong views about the problems of small businessmen. He will continue AED's policy of plumping for tax relief on their behalf.

Here is what Mr. Fitzpatrick says about each of his major 1959 AED goals.

• **Profit-ratio**—"Dealer's profits are now averaging only about 1.6%. We've got to show them how to bring that up above 2%, even close to 3%. The trouble in the business now is that everybody's an individual, everybody thinks their way is the best way."

• **Employees**—"Too many employees just don't consider that they should broaden themselves, that they have a stake in knowing more about their jobs and their industry. Manufacturers in particular should pay more attention to training their field men. Many of them just don't have the information about their own products that they should."

• **Used machinery**—"We will have to do more about teaching our clients the real value of their used machinery. Most of them think their old machines are worth a lot more than they really are."

Now a balding but vigorous 52, Mr. Fitzpatrick expects to devote almost a third of his time in the next year to his AED job.

He'll have many things going for him in his new post: a wide acquaintanceship in the field from his long participation in AED affairs; a business partner, William Danner, who, as a past-president of AED (1947), can offer sound advice; and the personal confidence born of success.

Curran Directs US Study Of Seven Texas Rivers

Charles D. Curran, consulting engineer of Washington, D. C., and former staff director of Water Resources and Power for the second Hoover Commission, became executive director of the new U. S. Study Commission created by Congress last August to survey seven Texas streams.

President Eisenhower appointed the 14-man commission in December. George R. Brown, Vice President of Brown & Root, Inc., Houston, was named chairman. The governor of Texas nominated seven of the members, one from each river basin. The President picked the others.

Comprehensive investigation of the seven rivers, from the Neches in the north to the Nueces in the south, all flowing into the Gulf of Mexico, will take at least two years. Staff headquarters of the new commission, which emphasizes local, state and federal cooperation, in that order, will be set up in Houston.

Careers

Business

Charles W. Humme has retired as financial vice president of Hawaiian Dredging & Construction Co., Ltd.

Charles Abramovitz and **John E. Eschliman** have been admitted as partners in the firm of Ralph L. Woolpert Co., consulting engineers, Dayton, Ohio.

Education

M. L. Manning has been named dean of the engineering division of South Dakota College at Brookings.

safety everyone can afford

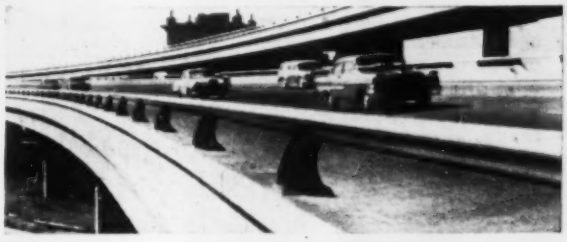
New Alcoa Aluminum Beam Guard Rail

Alcoa's new aluminum beam guard rail for highways combines maximum safety with modern appearance and minimum upkeep. Fabrication from high-strength aluminum alloys assures increased energy absorptive capacity.

Alclad aluminum provides permanent resistance to corrosion and means direct savings in maintenance costs. It resists the corrosive effects of road salts, industrial fumes and airborne grit. No painting—on or after installation—is necessary. Initial cost, only slightly higher than ordinary guard rail, is rapidly equalized by the savings in painting and other maintenance. Alcoa® Beam Guard Rail is available with aluminum posts, too.

Now is the time to get the full story on Alcoa Beam Guard Rail, Lighting Standards, Highway Signs, Overhead Structures and Chain Link Fencing. To learn how they help stretch taxpayers' highway dollars, call your nearest Alcoa sales office or write: Aluminum Company of America, 1910-B Alcoa Building, Pittsburgh 19, Pennsylvania.

BRIDGE RAILINGS of Alcoa Aluminum deliver maximum return for tax dollars, because first cost is last cost. Lightweight aluminum is easier to handle and faster to erect. Corrosion-resistant Alcoa alloys never need maintenance; they end painting costs that commonly run to a dollar per lineal foot per year.



OVERHEAD SIGN STRUCTURES eliminate periodic maintenance and the accompanying traffic tie-ups when they're built of Alcoa Aluminum. Tubular truss designs and single-chord spans meet any requirement and their lightness permits faster erection with minimum man power and equipment.

ALCOA ALUMINUM

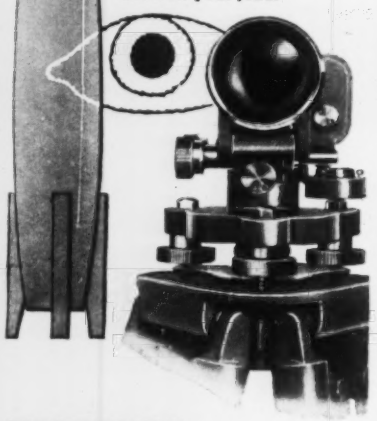
Your Guide to the Best in Aluminum Value

For Exciting Drama Watch **"Alcoa Theatre,"** Alternate Mondays, **NBC-TV** and **"Alcoa Presents,"** Every Tuesday, **ABC-TV**

You're Not Behind
The Times
IF You're Behind a

KERN
INSTRUMENT

Obsolete surveying tools are time-consuming, wasteful ... out of step with modern construction equipment used on your jobs.



KERN THE MOST MODERN surveying instruments available. Down-to-fundamentals, functional design ... maximum operational efficiency and portability ... reliable precision results.

KNOWN THE WORLD OVER
for accuracy, speed, reliability, economy.

- Minimum set-up time
- Fast, effortless, simple operation
- Readings at a glance
- Exceptional clarity and contrast of image

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PROMPT, RELIABLE SERVICE
FACTORY TRAINED PERSONNEL

Kern and Only Kern Offers You The Latest Designs of

Dr. Henry Wild

Kern SWISS *The FINEST in SURVEYING EQUIPMENT*

KERN INSTRUMENTS INC.
120 Grand St., White Plains, N.Y.

New Products

Snow is pushed into pit, where . . .

Snow Burner Beats Snowfall

"Submerged combustion" is used to melt snow in a device developed by Esso Research & Engineering Co. The apparatus is recommended for parking lots, shopping centers and airports.

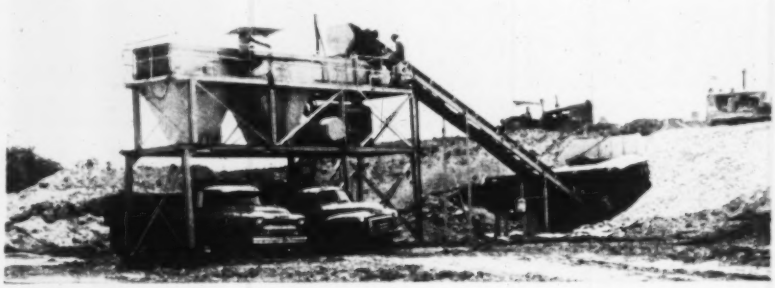
Using the combustion principle, 25 tons of snow can be melted per hour in equipment measuring 8 cu ft, the developer states.

The melter starts with a pit. Above the pit, oil and air are piped through separate lines to burners. Hot gases then shoot into the water-filled pit, agitating and heating up the water.

Snow pushed into the pit is melted instantly and the water is sent into nearby sewers.

In tests at a 100-car parking lot in Massachusetts, the new equipment disposed of an 8-in. snowfall in four hours. Conventional equipment would take at least 10 hours, Esso men say. Total oil cost is said to be about 25 cents per car space—about one-third of the cost of trucking.

The test melter used a 5x12-ft pit and took up less than half a car space. The equipment is manufactured and marketed by Thermal Research & Engineering Co., Conshohocken, Pa.



Stabilization Plant Gives Big Tonnage

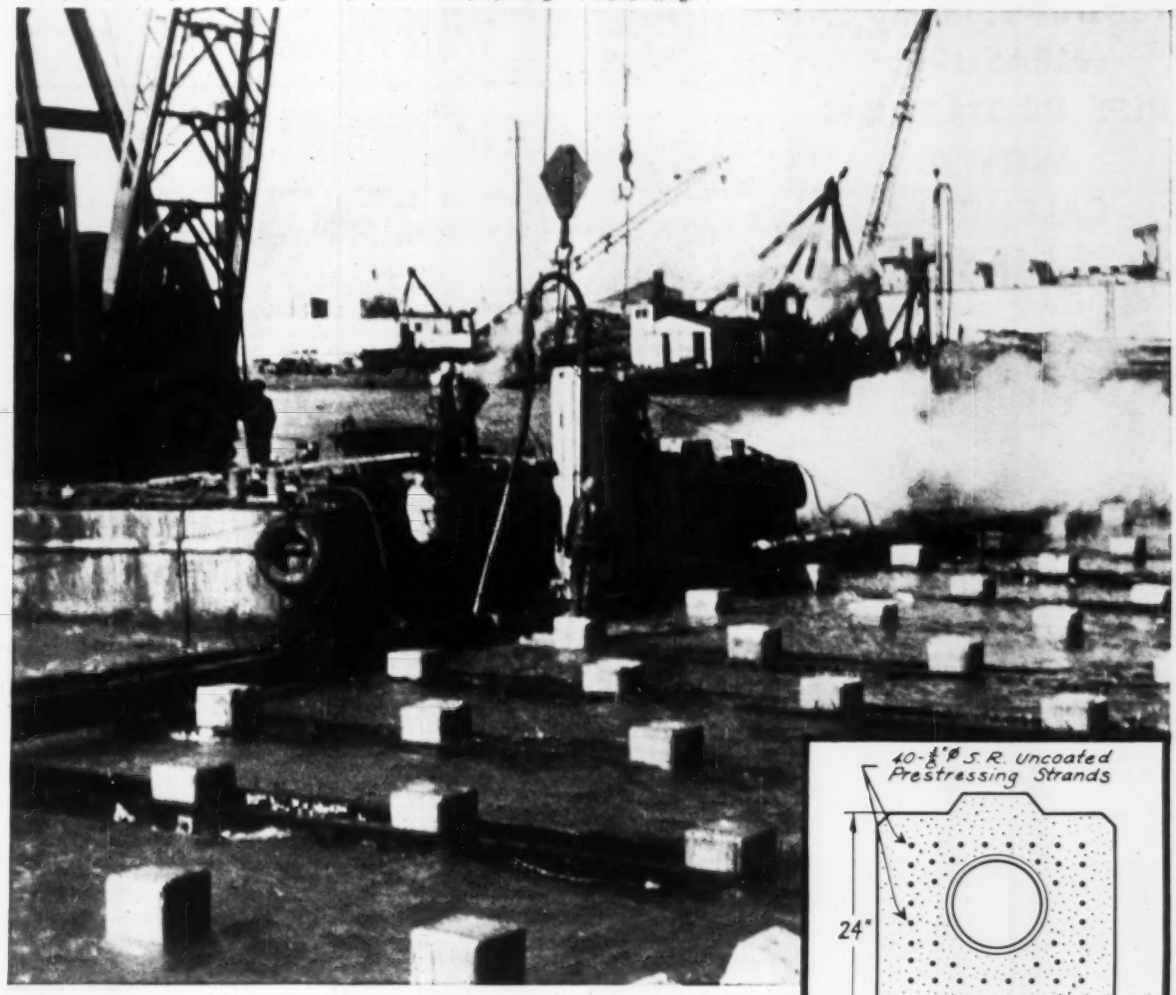
Boardman Co. is now manufacturing what it calls the construction industry's first 1,000-ton-per-hour, central-mix stabilization plant.

It is a pug-mill type, engineered and built for jobs where large tonnage is required. The portable plant is equipped with double discharge hoppers.

The basic unit is for preparing stabilized aggregate base material. Adding a silo turns it into a soil-cement stabilization plant.

All parts of the plant are controlled from a central panel on the operator's platform. Boardman Co., Oklahoma City, Okla.

Here piles are being driven through a template to assure proper alignment and fitting.



Cross-section detail of a combination sheet and bearing pile.

Prestressed Concrete Piles For C&O Railway Bulkhead

Part of the new Chesapeake and Ohio Railway facilities at Newport News, Virginia, is a 650 ft long bulkhead and relieving platform. Built by the Tidewater Construction Corporation of Norfolk, Virginia, it consists of interlocking prestressed piles 63 ft long and 24 inches square. These function simultaneously as sheet and bearing piles. In addition, some 453 bearing piles 20 inches square and varying in lengths from 60 to 65 ft are going into the finished project.

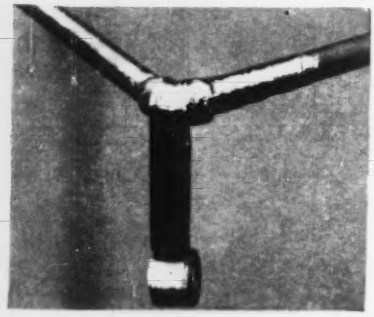
Among the benefits of prestressed piles – currently being taken advantage of by many State Highway Departments and State Maritime Commissions are: ease of handling and the ability to withstand driving shocks without cracking. Prestressed piles can be easily carried by attachments at one or two points on the pile, while other concrete piles of like dimensions would require three or four lifting points. Most important, prestressed piles can withstand *severe* driving conditions without cracking or spalling. This quality results in a crackless pile which is consequently impervious to freezing and thawing.

The great and practical economies of prestressed concrete in all manner of construction are values that designers and builders the country over are enjoying with increasing frequency. John A. Roebling's Sons Corporation, right from the introduction of this method in this country, has done important and informative work on all its phases; design, prestressing elements, casting beds and development of prestressed strand. We invite inquiries of any "prestressed" nature and will be happy to enlarge your knowledge and work with you in every way possible. Please address your requirements to Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

For True Economy... MEASURE PIPE PROTECTION WITH A CALENDAR!



Why Engineers Specify TAPECOAT ...The Quality Coal Tar Protection in Handy Tape Form for

Pipe	Tanks
Pipe Joints	Insulated Lines
Couplings	Splices
Fittings	Sprinkler Systems
Conduit	Bridge Crossings
Cables	Tie Rods

. . . in underground or under-water service

Since 1941, TAPECOAT coal tar coating in tape form has proved itself the best possible protection at lowest possible cost. Pipe and other surfaces TAPECOATED 17 years ago show no signs of deterioration—a record unmatched by any other type of tape.

Field application costs are lower with TAPECOAT because it is so easy to apply with the use of a torch. No tar kettles, technical know-how or special crews are required. TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths—sized to the job.

A TAPECOAT sales and service engineer is available at all times to assist you on any corrosion problem and on the various applications of TAPECOAT.

Write for illustrated brochure.

The **TAPECOAT** *Company*

Originators of Coal Tar Coating in Tape Form

1551 Lyons Street
Evanston, Illinois

Representatives in Principal Cities

Flood Control Dam, Pennsylvania

Class B concrete at $28.50 a cu yd accounts for 62.5% of $452,000-award for concrete gravity dam

Nineteen bidders competed for this job of constructing the Ryerson Station Dam on the North Drunkard Fork of Wheeling Creek in Richhill Township, Penn., a concrete gravity dam to provide a 62-acre conservation pool for New Ryerson Station State Park.

The $452,079-award to Seabright Construction Co., Wheeling, W. Va., by the Commonwealth of Pennsylvania Department of Forests and Waters, is 16.6% under the engineer's estimate, 3.6% below the second and almost 39% below the high bid. C. H. McConnell, Harrisburg, is chief of the Flood Control Division. Swindell-Dressler, Pittsburgh, is the consultant.

Class B concrete accounts for 62.5% of the contract. Low bid price on this item was $28.50 a cu yd. Other prices ranged from $30 to $44 a cu yd.

Dam length is 515 ft, including 200-ft overflow spillway, 42 ft high, and concrete stilling basin.

Class B concrete must attain a compressive strength of 2,500 psi in 28 days.

Minimum wages on the job range from a high of $3.20 for skilled, through $2.30 for semi-skilled to $2.04 for common laborers.

The nineteen bids included:

1C	Seabright Construction Co., Wheeling, W. Va	$452,079
2	Harrison Constr. Co., Pittsburgh	468,782
19	Dravo Corp., Pittsburgh	737,125
EE	Swindell-Dressler, Pittsburgh	542,402

Bids: 1-6-59 Items	Unit	Quantity	Unit Prices 1C	2
Stream diversion & care	ls	job	$ 6,300	$35,000
Clear & grub	ls	job	11,000	13,100
Field office for engineer	ls	job	4,000	2,400
Excavation, common	cy	17,250	1.12	1.00
rock	cy	5,610	6.00	3.00
structural	cy	340	5.00	1.50
Backfill, random	cy	630	1.00	0.50
compacted	cy	225	3.00	2.00
Gravel drain	cy	130	11.00	8.00
Dumped riprap	cy	180	13.50	12.00
Concrete,				
cl A, walls & stems	cy	57	100.00	90.00
slabs & footers	cy	670	37.50	35.00
cl B	cy	9,920	28.50	30.00
Reinforcement bars	lb	65,700	0.16	0.145
Sluice gate & oper mechanism	ls	job	2,400	2,690
Trash rack	ls	job	1,000	1,150
Metals, miscellaneous	lb	7,000	0.70	0.73
Weep holes	ea	21	7.00	2.00
Drill holes, 1½"	lf	2,900	3.00	2.90
3"	lf	1,250	6.00	5.20
Pressure grouting	sax	1,300	5.00	4.35
Connection to grout holes	ea	300	6.00	5.25
Wash & test holes for groutg	hr	100	27.00	20.80
Grout pipe	lb	1,000	1.20	1.00
Fence, chain link	lf	450	5.00	6.00
highway guard	lf	400	3.35	3.00
Neoprene water stop	lf	590	6.00	5.20
Maintain traffic	ls	job	2,000	2,000
Seeding	ls	job	900.00	840.00

Complete: 6-1-60
Liquidated damages: 75 day

Concrete pipe used for . . .

Lake Charles, La., Storm Drain

Reinforced concrete pipe, ranging in size from 15 to 84 in. dia, ranges in price from $4.50 to $50 a lin ft, as bid for Lake Charles, La. storm drainage improvements. D. W. Jessen and Rodney Vincent, Lake Charles, are the engineers.

The $345,583 award to A. M. Mutersbaugh by the Calcasieu Parish Gravity Drainage Board, District 4, is 2.4% below the second and 28% below the high of the four bids.

The job will take 26,255 ft of pipe, and includes catch basins, junction boxes, and removal and replacement of surfacing, pavement and sidewalks.

The four bids include:

1C	A. M. Mutersbaugh, Lake Charles, La	$345,583
2	Flenniken Constr. Co., Shreveport, La.	354,139
4	F. Miller & Sons, Lake Charles, La	479,875
EE	D. W. Jessen, Rodney Vincent, Lake Charles	345,583

Bids: 11-6-58 Items	Unit	Quantity	Unit Prices 1C	2
Reinf conc pipe, 15"	lf	100	$4.50	$4.75
18"	lf	2,960	5.00	5.30
24"	lf	5,380	6.75	5.98
27"	lf	1,350	7.50	6.90
30"	lf	6,345	8.50	8.58
36"	lf	3,000	11.00	11.44
42"	lf	1,820	13.00	14.00
Reinf conc pipe, 48"	lf	1,810	16.00	17.93
54"	lf	1,840	19.00	21.00
60"	lf	150	25.00	23.50
66"	lf	800	30.00	27.60
72"	lf	680	33.00	33.00
84"	lf	20	50.00	41.00
Catch basins, type A	ea	4	300.00	325.00
type C	ea	129	250.00	280.00
Junction boxes, type A	ea	5	400.00	500.00
type B	ea	8	800.00	615.00
Reinf conc pavement, 6", r&r	sy	1,400	7.00	7.50
Conc sidewalk, 4", r&r	sf	1,500	0.70	0.70
Base course, 6" compacted sand, clay & gravel, & 1½" asphalt wearing course r&r	sy	30	7.00	6.00
Street surfacing, replace shell	cy	800	5.00	5.00
gravel	cy	100	6.00	5.00
Pipe foundation, concrete	cy	20	18.00	30.00
shell	cy	20	6.00	6.00
Sheeting & bracing left in pl	Mfbm	5	40.00	100.00

r&r Remove & replace
Completion schedule: 300 cal days

Brick Bargain

The price of common backing brick in Dallas was $27.50 per M for December, not $7.50 as reported in ENR, Dec. 25, 1958, p. 56.

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Iron and Steel Products: Last, Jan. 15; Next, Feb. 12
- Wood Products, Glass, Explosives, Chemicals: Last, Jan. 22; Next, Feb. 19
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Jan. 29; Next, Feb. 26
- Wage Rates, Building Board, Lath, Insulation: Last, Jan. 29; Next, Feb. 26

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C.L. lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8x8x16-in.,* truckload per block		CONCRETE Ready Mixed 1:2:4 del. 50 cy & over
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand gray.	Lt. wgt. agg.	
Atlanta	$4.35a	$3.95a	$3.60a	$3.10e	$3.10e	$1.85‡e	$2.18e	$2.33e	$1.65e	$1.75e	$0.175o	$0.21o	$13.75g
Baltimore	4.43a	4.03a	3.54Ra	2.80‡a	2.80‡a	2.25‡a	2.85‡a	2.90‡a	2.05‡a	2.00‡a	18a	18a	13.50ou
Birmingham	4.23c	3.30cf		2.53ns	2.53ns	2.13ns	2.75e	2.75e	1.55d	1.65d	18	18	13.55q
Boston	5.80ip	4.52ap	4.80mp	3.00qez	3.00qez	3.00qez	1.75qez	1.85qez			23o	275ao	15.00q
Chicago	4.13aq	3.87aq	3.90 3.95q	3.75‡e	3.75‡e	4.13‡be	3.95‡be	3.95‡be	2.25‡e	2.25‡e	25‡e	25‡be	14.00et
Cincinnati	4.68c	4.16c	4.18c	2.92‡cu	2.84‡cu	2.84‡cu	2.64‡cu	2.64‡cu	1.89u	1.89u	19o	24ao	13.75p‡t
Cleveland	N.A. in C.L.		3.89‡ae	2.25ae	2.10ae	1.75ae	2.80‡g	2.80‡g	3.45‡f	3.45‡f		22f	15.50u
Dallas	3.75a	3.25a	3.63a	2.65‡a	2.75‡a	1.90‡	2.43	2.63				27	12.50z
Denver	4.79a	4.29a	4.79	1.90‡	2.10‡	1.37‡b		3.35‡z			22	245a	10.70
Detroit	4.25a	3.74aqq	3.72a	4.50‡abm	4.50‡abm	4.25‡abm	3.75‡abm	3.75‡abm	2.47aqaa	2.47aqaa	22p	25‡ap	14.40j
Kansas City	4.23a	3.83a	4.10a			1.70‡a	2.00‡a	2.00‡a			22a	26c	13.50
Los Angeles‡	5.12eh	4.68eh	5.60c	2.56‡af	2.76‡af	2.41‡af	2.41‡af	2.46‡af			17fm	285m	12.96kl
Minneapolis	4.52a	4.11a	4.08a	2.70‡ae	2.70‡ae	1.60‡ae	3.95‡ae	3.95‡ae			19q		14.30f
Montreal	3.36‡de	3.11‡de	3.72‡de	1.90‡a	2.15‡a	2.40‡a	1.90‡t	2.15‡t	2.00s	2.00s	20	28t	10.80e‡
New Orleans	4.06b	3.65b	3.85b	2.45b	2.45b	2.06b†			1.65d	1.75d	275e		14.00o
New York	4.80a	4.29a	3.84		3.20bk	2.30bkR	3.10bl	3.10bl			265nwR	326neR	18.10an
Philadelphia	4.72‡ae	4.31‡ae	3.76‡e	2.85‡a	2.85‡a	2.35‡a	2.70‡a	2.80‡a	2.20‡a	2.20‡a	25.32		14.15kl
Pittsburgh	5.65b‡k	4.62b‡	5.00bl	2.68‡aqr	2.68‡aqr	2.08‡aqr	2.00‡aqr	2.00‡aqr	2.20w	2.20w	26r	26r	15.80s
St. Louis‡‡	4.16 4.48a	3.76 4.08a	3.86 4.18a	3.25‡ae	3.10‡ae	2.40 3.10‡ae	1.65fe	1.75fe			21‡o	30‡co	12.65‡13.15q
San Francisco	4.34c	3.79c	4.75c	2.02	2.02	2.12	2.17	2.17			21	28ef	13.00ce
Seattle	4.22‡a	3.80aq	4.40a	4.25‡bm	4.25‡bm	4.25‡bm	4.50‡bm	4.50‡bm			26e	37ea	13.90‡
Toronto	4.00n	3.84d	4.00n	2.40	2.40	2.05	2.40	2.40	2.20	2.20	26	275cu	15.25u

‡ Delivered. * Prices incl. dealers discount except as noted. ≠ Add 4% sales tax. ‡‡ Add 2% intrastate sales tax. R Revised (eff. 3 1 57).

CEMENT: •a Less 10¢ disc. 15 days. •b Less 2% disc. 15 days. •c Less 10¢ disc. 10 days. •d 10¢ disc. 20 days. •e Truckload lots. •f Fob mill, add $14.58 to $21.31 per car switching charges. •g fob mill + freight. •h LCL. •i Less 2% disc. 10 days. •j Truck lots, fob yard. •k 100 bag lots. •l over 150 sacks. •m Sold in bags only. •n Plus 5% disc. 30 days. •o Plus 50¢ for Sat. del. •p 5-9 ton truckload. •q F.o.b. mill.

SAND, GRAVEL, STONE & SLAG: •a Truck lots. •b Per cu. yd. •c 5 tons up. •d Less 5¢ disc. 15 days. •e Less 2% disc. 10th. •f Less 2% disc. 15th. •g Less 5% for cash. •h Less than 5 tons. •i Plus 8% mun. & prov. tax. •j F.o.b. quarry. •k Barge lots asd. •l F.o.b. scow Hudson river. •m Less 2% for cash. •n F.o.b. cars. •q F.o.b. yard. •r Less 5% disc. 15th. •s Less 2% disc. 10 days. •t Less 10¢ disc. 10 days. •u Less 5¢ disc. 10 days. •v Less 2% disc. 15 days. •w Less 10¢ disc. 15 days. •x Incl. 35¢ switch. charge. •y F.o.b. dock. •z 5-8 tons. •aa less 5% disc. 15 days.

CONCRETE BLOCK: •a Cinder. •b Waylite. •c Haydite. •d Celocrete. •e 5⅛ x 8 x 12 in. •f 8 x 4 x 16. •g F.o.b. truck at job. •h F.o.b. plant San Rafael. •m F.o.b. yard. •n 8 x 8 x 18. •s Less 2% disc. 10 days. •p Less 2% disc. 10th. •q Less 5% disc. 10th. •r Less 2% disc. 15 days. •s Less 2% disc. cash. •t Siporex, 7 x 8 x 18. •u Less 5% disc. 10 days. •v Less 12% disc. 15th. •w Eff. 1 1 57.

READY MIXED CONCRETE: •a 6 cu yd or over del. Man. •b 25 cu yds or more. •c 10-100 cy. •d 1-3 mi. zone add 15¢ for ea. add'l 1-mi. zone. •e 2,000 lb comp. •f 2,500 lb comp., less 5% disc. 30 days. •g Less 25¢ disc. 15 days. •h Less 50¢ for cash. •i 5% off for cash. •j 2% off for cash. •k Federal tax included. Add 6% mun. & prov. tax. •l 1:2½:3½ base price. •m F.o.b. yard. •n Plus escalator clause. •o Less 2% disc. 15 days. •p Less 50¢ disc. 15 days. •q Less 2% disc. 10 days. Add 50¢ per zone. •r 2000 wgt. •s Less 5% disc. 10 days. •t Incl. 50¢ heating. •u Less 2% disc. 15th. •v Sat. del. +50¢. •w 10-100 cy.

CURRENT MAXIMUM PRICES AT CEMENT MILLS: Subject to 10¢ discount, 15 days. For paper bags add 40¢ per bbl., not refundable.

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn	$3.45‡	Buffington, Ind	$3.40‡	Steelton, Minn	$3.45‡	Muskegon, Mich	$3.45‡	Toledo, O	$3.45‡
Clinchfield, Ga	3.45‡	Independence, Kan	3.25‡	Leeds, Ala	3.30‡	Saginaw, Mich	3.45‡	Milwaukee, Wis	3.50‡
Kingsport, Tenn	3.45‡	Hannibal, Mo	3.35‡	Duluth, Minn	3.45‡	Wyandotte, Mich	3.45‡	Green Bay, Wis	3.50‡
West Des Moines, Iowa	3.50‡	Northampton, Pa	3.50‡	Hudson, N. Y.	3.50‡	Buffalo, N. Y	3.55‡	Ironton, O	3.45‡
Nazareth, Pa	3.50‡	Universal, Pa	3.60‡	Alpena, Mich	3.35‡	Oswego, N. Y	3.60‡	Montreal City	2.56†
Bath, Pa	3.50‡	Waco, Tex. (+ 10¢ tax)	3.35‡	Detroit, Mich	3.45‡	Cleveland, O	3.50‡	W. Winfield, Pa	3.60‡
Lesley, Pa	3.50‡	Glant, S. C	3.45‡	Howes Cave, N. Y	3.50‡	Alsen, N. Y.	3.50‡	Security, Md	3.50‡

† Price to hold for first quarter of 1959. ‡ Price guaranteed through December 31, 1959.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS FLUXES Per gal., 80-300 penetration		CUTBACK ASPHALT MC per ton		ROAD OIL Per gal.	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8⅛ in. carload lots	Wood per sq. yd. 3⅛ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta				$26.60PS	$45.00PS	$0.11PS	$0.23SS	$0.12wS	$0.23SwS	$0.12S	$0.11S	$0.23SS
Baltimore	150.00			23.00t		095t	0.185t	10wE	19wE	10t	105t	0.195t
Birmingham		66.00t		25.12	25.69O	1069	0.1093O	1162	1188O	1006O	1069	0.1093O
Boston				22.00apS	46.00apS	22.00anS	46.00anS	105awF	24awF	14aOR	15OR	
Chicago	150.00‡a	90.00‡ab	3.95/4.00‡a‡	21.20b	31.20b	20.40bv	30.40bv	975bwH	1775bwH	08b		
Cincinnati												
Cleveland		89.50‡dg	6.30g	26.00tA		26.00tA		1165twAF			1265tAG	21AG
Dallas	e	40.80p	e	26.82	46.20	1138	1983	30.45	52.40	.1100	1138	1983
Denver		50.00										
Detroit		116.00		33.05		32.45v		13.50wJ		.1133		28
Kansas City	e	e	e	18.00cJ		18.00cv		0825cwJ		079c	0.125c	
Los Angeles‡	e		e	21.50dmz		21.50dnz		23.00dK		22.00dnn	23.90pq	26.30pq
Minneapolis			3.73A	26.00		26.00e		0.115w		0.105	1365	
Montreal	e	e	e	32.50n	59.80n	176n	226n	18.70nwE	23.70nwE	154n	242n	27nX
New Orleans				20.00e	o	20.00ev	o	095ew	o	085eB	095eBL	1905eB
New York			3.70‡	21.99m	43.94m	21.99nf	43.94nf	10.61wF	20.01wF		10.68u	20.11u
Philadelphia	175.185	110.120	4.06	18.21U		20.21U		0.085 10FU		0.085 10U		
Pittsburgh	60.00k	95.00m	6.35n	31.20ne		31.20ne		1403i		142V	1403i	
St. Louis‡‡				19.74f		1825f		0893fwM	0918fw	0.165f	1825‡OR	8250R
San Francisco		70.00		24.50g	41.50g	24.50gkv	41.50gkv	24.50gN	43.00gN	25.25gwR	25.50gwX	2963wX
Seattle				25.00z	40.00k	25.50nzcc		26.50KE		24.25kvV	23.50kwX	45.10kwX
Toronto		148.50	4.50‡	41.30	60.83	0.2145	0.2505	0.22w	0.264w	0.204	0.216Z	271Z

‡ Delivered. ≠ Add 4% sales tax. ‡‡ Add 2% intrastate sales tax. R Revised.

PAVING BRICK & BLOCK: •a Less 2% disc. 10th. •b 3 x 3⅛ x 8. •c 2¼ x 8⅛ x 4. •d Truckload lots. •e Not used. •f 2" interior 6 lb. tr. •g Less $1 Mdisc. 15th. •h 2" tr, 8 lb. •i 3 x 3⅝ x 8⅛. •j 2¼", 6 lb. tr. •k Used. •l Redshale. •m Pine oak $6.57. •n Truck del. •o Less $1 M disc. 15 days. •p Used: $40; new: $80.

ASPHALTS: •a F.o.b. refinery, Everett, Mass. •b F.o.b. refinery, Lockport, Ill. •c F.o.b. Sugar Creek, Mo. •d F.o.b. refinery, El Segundo. •e F.o.b. Baton Rouge. •f F.o.b. Hartford, Ill. •g F.o.b. refinery, Richmond, Calif. •h F.o.b. Martinez. •i F.o.b. refinery, Baltimore. •j F.o.b. refinery, Inglewood, Calif. •k 50-110 penetr. •l Less than 100 penetr. •m 40-300 penetr. •n F.o.b. refinery, Montreal. Fed. tax included; add 6% for mun. & prov. •o Drums not avail. Shipped in steel bbl. •p 80/70 penetr. •q RSI. •r In customer's drums. •s Shipped in drums, per drum. •t 150-300 penetr. •u Per 100 gal. •v Per ton. •w Per gal. •x Also tank trucks. •y F.o.b. Oakland. •z F.o.b. Edmonds. •A F.o.b. refinery, Cleveland. •B F.o.b. Destrehan, La. •E RC. •F Also RC. •G Also MS, SS. •H RC 0.5 incl. •I MC 4. •J MC, RC $0.095. •K MC 3, 4, & 5. •L MS. •M MC 1.5, RC 1.5, $0.0919. •N MC 3. •O Truckload. •P F.o.b. refinery, Atlanta. •Q F.o.b. Eldorado, Ark. •R Delivered within 50 mi. •S Less 2% disc. 10 days, net 30. •T Less 1% disc. 10 days. •U F.o.b. refinery. •V Less 2% disc. 15 days. •W SC 2. •X RS 1. •Y SC 1. •Z Incl. 10% Sales Tax. •aa SC 3, 4, & 5. •bb RS 2. •cc In used drums.

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—LB & CA

▲ MAINE—State Hy. Comn., Augusta. Bids opened 1/21, J. R. Cianchette, Pittsfield, Me., LB $1,067,175 (4 bidders), grading, drainage, base project, incl. 1 bridge, 1.335 mi. City of Bangor, FAP No. I-95-8(18) 180, Penobscot Co. CD 1/12.

▲ Baylor Constr. Corp., 210 East 40 St., New York, N. Y., LB $1,226,460 (15 bidders) Contract 2, sewage treatment plant and pumping station, WALLINGFORD, CONN. Town, Sewer Auth., Town Hall, Wallingford, Conn. Bids Dec. 15. CD 12/12.

BUILDINGS—LB & CA

▲ I. P. Macauley, Little Meadow Rd., Guilford, Conn., Owner Builds, $1,984,000, 124 HOUSES, Boston Post Rd., GUILFORD, CONN.

▲ Frouge Constr. Co., 147 North Ave., Bridgeport, Conn., LB $2,223,780, Brian McMahon JUNIOR HIGH SCHOOL, NORWALK, CONN. Town of Norwalk, Town Hall, Norwalk, Conn. Bids Jan. 20, CD 1/23; Bridgeport Pipe Engineering Co., 24 Crescent Ave., Bridgeport, Conn., LB $410,000, plumbing, heating, ventilating for Brian McMahon Junior High School (Norwalk, Conn.).

▲ E. & F. Constr. Co., 94 Wells St., Bridgeport, Conn. LB $2,700,000 HOME FOR AGED, "St. Joseph's Manor" Hubbel Property, Main St., TRUMBULL, CONN. Diocese of Bridgeport, Chancery Office, 359 Washington Ave., Bridgeport, Conn. Bids Jan. 20. CD 1/8.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ Pa., Phila.—POST OFFICE, etc.—BA 4/9—Post Office Dpt., 30th St. Post Office (selected list of bidders) purchase site and erect post office and transportation bldg., 30th and Chestnut Sts. (lease to govt. for 50 years). $2,000,000. Bellante & Clauss, 810 Rittenhouse Square, archts. CD 1/14.

HEAVY CONSTRUCTION—LB & CA

▲ NEW YORK—Dpt. P. Wks., State Office Bldg., Albany, Hendrickson Bros., Inc., 63 N. Central Ave., Valley Stream, N. Y., CA $1,343,352, est. $1,699,000, constr. final 0.74 mi. four-lane divided concrete section Glen Cove Arterial and 0.25 mi. access roads between Cedar Swamp Rd. and Long Island R.R., Nassau Co. Bids Nov. 20. CD 11/21, under LB.

▲ PENNSYLVANIA—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,
Gasparini Excavating Co., Inc., 1439 Main St., Peckville, Pa., CA $1,732,733, est. $2,500,000, 19,651 ft. divided hy. C.I. conc., 24 ft. wide each side 60 ft. earth median; 7 bridges, L. R. 1001 (1-B) Proj. S-26-2, FAI, S. Abington and Scott Twps., Lackawanna Co. Bids Dec. 19, awarded Jan. 21. CD 12/23, under lb.

BUILDINGS—LB & CA

▲ George Rosen & Son, Inc., 1650 Broadway, New York 19, N. Y., LB $1,039,500 (14 bidders) general constr. conversion Neponsit Beach Hospital to HOME for AGED, Queens Boro. NEPONSIT, N. Y. Dpt. P. Wks., Rm. 1800L, Municipal Bldg., New York 7, N. Y. Bids Dec. 22. CD 12/17.

▲ Center City, Inc., Attn. Irvin Roberts, Rte. 45, Woodbury, N. J., Separate Contracts, $7,690,000, 769 unit RESIDENTIAL DEVELOPMENT, MANTUA, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ Chemical Constr. Corp., 525 W. 43 St., New York, N. Y. CA (largest SULPHURIC ACID SLUDGE BURNING PLANT, PAULSBORO, N. J. Dixon Chemical Industries, Inc., 1051 Bloomfield Ave., Clifton, N. J. CD 3/13.

▲ Greenfields Village, Inc., Attn. Robert Budd, Rte. 45, Woodbury, N. J., Separate Contracts, $4,810,000, 370 unit RESIDENTIAL DEVELOPMENT, West Deptford Twp., WOODBURY, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ S. H. Evert Co., Danville Rd., Box 89, Bloomsburg, Pa., CA $2,593,000, Base Bid (7 bidders) general constr. HIGH SCHOOL, EASTON, PA. Easton Area Jt. School Sys., Monroe and Reeder Sts., Easton, Pa. Bids Jan. 6. CD 12/10.

SOUTH

HEAVY CONSTRUCTION—BA

▲† Kentucky and Indiana—BA 2/11—U. S. Eng., P. O. Box 59, Louisville 1, Ky., reconstr., widen canal, sewer extension, etc., Louisville Locks and Dam, Ohio River, CIVENG-15-029-59-43. Over $5,000,000. Extended date. CD 1/13.

BUILDINGS—BA

▲ Ala., Auburn—SCIENCES—BA 3/5—Alabama Polytechnic Institute, 141,558 sq. ft. biological and plant sciences bldg., $2,000,000. Plans deposit $50. Van Keuren, Davis & Co., 3004 7 Ave., Birmingham, Archts. CD 12/27/57.

HEAVY CONSTRUCTION—LB & CA

▲ The Coite Somers Co., Box 111, Vidalia, Ga., LB $1,167,100, recreation bldg., Jekyll Island, GEORGIA. Jekyll Island State Park Auth., 124 Judicial Bldg., Atlanta, Ga. Bids Dec. 14. CD 1/5.

▲ FLORIDA—State Rd. Dpt., Tallahassee,
rejected bids Oct. 28, 4 and 6 lane 9 in. c. conc. pavement, 6½ in. and 8½ in. limerock base with Type 1, b. conc. surf. course 6½ in. limerock base shoulders with Type 1-A surf. tr. drainage structures, 2 concrete box culverts of bridge length, 6 concrete slab deck grade separation bridges (two of 2-lane, two of 3-lane and two of 6-lane) with concrete beams on concrete piers founded on prestressed piling (the length of structures is 983.8 ft.) aluminum handrail, electrical equipment (conduits) removel bldgs., fencing, etc. 1.196 mi. SR 8, 10 and 15 between McDuff Ave. and Goodwin St. in Jacksonville, FAI Proj. No. I-10-5 (6) 356, Job No. 72270-3480, Duval Co. LB $1,812,843. Will re-advertise. CD 10/31, under LB.

BUILDINGS—LB & CA

▲ M. T. Broyhill & Sons Corp., 4610 Lee Hy., Arlington, Va. Owner Builds. Est. $3,500,000, 1st section 152 HOMES, Broyhill Langley Estates, Churchill Rd. between McLean and Langley, McLEAN, VA.

▲† Combustion Engineering Co., 911 W. Main St., Chattanooga, Tenn., CA $10,960,000, STEAM BOILER for thermal power plant, Widows Creek, ALABAMA. Tennessee Valley Auth., Sprankles Bldg., Knoxville, Tenn. Awarded Jan. 2. CD 10/7/57.
General Electric Co., 1 River Rd., Schenectady, N. Y., CA $16,112,000, TURBO-GENERATOR, Widows Creek, (Alabama).

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ Ill., Hinsdale—BA 2/17—Village, 19 E. Chicago St., Div. 2, 2,360 ft. semi-ellip concrete sewer; Div. 3, 7,340 ft. semi-ellip sewer in tunnel, $2,000,000. Greely & Hansen, 220 S. State St., Chicago, Zone 4, engrs.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000, other public works $88,000, industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of Interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England — Middle West
Middle Atlantic — West of Mississippi
South — Far West

PROPOSED WORK
Water Supply — Public Buildings
Sewers, Waste Disposal — Mass Housing
Bridges — Commercial Buildings
Streets & Roads — Industrial Buildings
Earthwork, Waterways — Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

BUILDINGS—BA

▲ O., Lorain—HOSPITAL—BA 2/24—St. Joseph's Hospital, Broadway and 21st St., hospital addn. $1,600,000. Garfield, Harris, Schaefer, Flynn & Williams, 1740 E. 12th St., Cleveland, Zone 14, archts. CD 10/8.

HEAVY CONSTRUCTION—LB & CA

▲ WISCONSIN—State Hy. Comn., State Office Bldg., Madison.
Lee H. Parker and Lee H. Parker Constr. Co., Inc., 2015 N. Richmond St., Appleton, Wis., CA $1,506,522, base and concrete pavement 8.14 mi. Hudson-Eau Claire (Menomonie-Elk Creek Sect.) Road and West Menomonie relocation, IH 94 and S.T.H. 25, Contrs. 1 and 4 (combination) and Contr. 4, Projs. I-94-1(31)141 and T 067(7), Dunn Co. Bids Jan. 15. CD 1/21, under LB.

BUILDINGS—LB & CA

▲ Paugh & Brown Constr. Co., 6007 Euclid Ave., Cleveland 3, O., CA $1,090,018, general constr. JUNIOR HIGH SCHOOL, Elinore Ave., EUCLID, O. Euclid Bd. Educ., 23131 Lake Shore Blvd., Euclid, O. Bids Dec. 16. CD 12/6, under LB.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲† New Mexico—BA 2/12—U. S. Eng., P.O. Box 1538, Albuquerque, earth embankments and spillway excavation, incl. over 3 mil. cu. yd. earth excav. and 150,000 cu. yd. rock excav.; 12,000,000 cu. yd. embankment; 330,000 cu. yd. rip rap, etc., Abiquiu Dam, Rio Chama, Inv. No. CIVENG-29-005-59-8. $5,000,000-$10,000,000. Extended date. CD 1/13.

▲† Wyo., Cheyenne—LAUNCH FACILITIES AND UTILITIES—BA 2/26—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., launch facilities and utilities, incl.: 9 launch and service bldgs.; 3 launch operations bldgs.; 3 power and pump houses, 4 well pumps and pump houses, and utilities, incl. water lines, sewage disposal sys.; underground electrical sys.; paving and fencing and installing 9 generators. Squadron II, Francis E. Warren Air Force Base, Spec. No. ENG-25-066-59-30. $10,000,000-$20,000,000. CD 1/21.

▲† South Dakota—BA 3/4—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., earthwork, Stage VII, consisting Sched. A, right bank excav., left bank excav., rolled embankment, uncompacted fill barrier, levee embankment, 48 in. right bank drainage conduit, incl. extensettlement gages and piezometer tubes. Sched. B, riprap (furnish, place) spalls, filter blanket., Sched. C, entire work Oahe Reservoir Proj., near Pierre, ENG-25-066-59-66. CD 1/19.

HEAVY CONSTRUCTION—LB & CA

▲† Peter Kiewit Sons & Co., 1024 Omaha National Bank Bldg., Omaha, Neb., CA $4,168,845, constr. SAGE facilities, Sioux City Air Force Base, ENG-25-066-59-37, SIOUX CITY, IOWA. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Jan. 13. CD 1/16, under LB.

▲† Bushman Constr. Co., 5 and Felix, St. Joseph, Mo., LB $1,191,563, est. $1,240,100 Schedule 1: LB $242,985, est. $284,230, Schedule 2, Missouri River Basin Project earthwork and structures, Osborne Canal Alton, Rooks and Osborne Counties, Spec. DC5129, KANSAS. Bureau Reclamation, Dpt. Interior, Stockton, Kan. Bids Jan. 22. CD 12/15.

▲† B. & M. Constr. Corp., 1st National Bank Bldg., Oklahoma City, Okla., LB $1,372,551, est. $1,389,373, earthwork, structures, concrete pipe lines for Anadarko aqueduct, Western Farmers Electric Cooperative lateral and Fort Cobb lateral, Washita Basin Proj., Spec. DC 5126, Anadarko, OKLAHOMA. Dpt. Interior, Bureau Reclamation, Bldg. 1A, Denver Federal Center, Denver, Colo. Bids Jan. 20. CD 12/10.

TEXAS—State Hy. Comn., Austin. Bids opened 1/17.
Tex.—Texas Bitulithic Co., Box 10365, Dallas, Tex. LB $194,301, b. conc. 18.92 mi. Hy. St. 155, Proj. C 520-4&5-10&12, Marion and Upshur Counties. LB $1,160,913, elevated expressway 0.475 mi. Hy. IH
Tex.—R. W. McKinney, Nacogdoches, Tex., Geo. Kies, 1303 Robt. E. Lee Rd., Austin, Tex. and Harry Newton, Graham, Tex., LB $2,099,595, base, hot mix, b. conc. and 5 grade separations 5.99 mi. Hy. IH 35, Proj. I 35-4 (25) 346, McLennan and Hill Counties.
Tex.—John F. Buckner & Sons, R. C. Buckner, Cleburne and Jacksonville, Tex., LB $1,282,162, frontal road grade, small structures, grade separation, base and b. conc. 11.178 mi. Hy. IH 30, Proj. I 30-1 (7) 011, Rockwall Co., all foregoing. CD 12/24.

BUILDINGS—LB & CA

▲† Henry Carlson Co., 2605 South 1st St., Sioux Falls, S. D., CA $1,690,167 general constr., incl. mechanical INTENSIVE TREATMENT BLDG. NO. 145 and water softener in boiler house, Bldg. 137, at Veterans Admin. Hospital, FORT MEADE, S. D. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Jan. 13. CD 1/15, under LB.

▲ Allis-Chalmers Mfg. Co., 1126 S. 70th St., Milwaukee, Wis., CA Est. $33,100,000, 66,000 electrical kw. REACTOR PLANT with nuclear superheater, PIERRE, S. D. Central Utilities Atomic Power Assocs.; c/o Northern States Power Co., 15 S. 5th St., Minneapolis, Minn. Central Utilities Atomic Power Assocs., includes Northern States Power Co., Mississippi Valley Public Service Co., Otter Tail Power Co., Interstate Power Co., Iowa Power & Light Co., Iowa Southern Utilities Co., Wisconsin Public Service Co., Northwestern Public Service Co., St. Joseph Light & Power Co. and Central Electric Co.

▲ 2300 Riverside, Inc. & Raymond D. Nasher, Republic National Bank Bldg., Dallas, Tex., Owner Builds, $5,000,000, 21 story APARTMENT, swimming pool, TULSA, OKLA. Geo. F. Harrell & E. G. Hamilton, 819 Republic Bank Bldg., Dallas, Tex., archts. CD 12/31.

▲ Henry C. Beck Co., 1st National Bank Bldg., Dallas, Tex., CA Est. $2,000,000 SHOPPING CENTER, NW Hy. west of Lemmon Ave., DALLAS, TEX. Bachman Village Shopping Center, c/o Majors & Majors (Realtors), 1st National Bank Bldg., Dallas, Tex. CD 1/19.

▲ R. E. Farrow Co., N. Fort Worth Rd. and Hy. 183, Irving, Tex., LB $1,579,708 est. $2,269,490 (3 bidders). Base Bid STATE SCHOOL for Mentally Retarded Children, DENTON, TEX. Bd. for Texas Hospitals & Special Schools, 4405 Lamar Blvd., Austin, Tex. Bids Jan. 14. CD 12/23.

▲ Lackland City Homes, 103 Springvale St., San Antonio, Tex., Purchase and Hire, $1,150,000, 104 DWELLINGS, exten. Lackland City Subdivision, off Loop 13 and Hy. 90, SAN ANTONIO, TEX. CD 1/9.

FAR WEST

BUILDINGS—BA

▲ Wash., Renton — DEPARTMENT STORE, etc. — BA 2/12—Young, Richardson & Carleton, archts., Central Bldg., Seattle, Zone 4, 2 story, 120,000 sq. ft., rein.-con., steel frame, air-conditioned department store and 22,000 sq. ft., steel frame food market, for Robert L. Edwards, 12906 86 Ave. South. Sears Roebuck & Co., 925 S. Homan St., Chicago, Ill., lessee for dpt. store. Over $1,000,000. CD 12/29 and CD 3/10.

▲ Calif., Concord—SCHOOL—BA 3/10—Mt. Diablo Unif. School Dist., Grant St., 92,378 sq. ft., wood frame, rein.-con. steel, High School No. 5, Viking Dr., North Pleasant Hill, $1,835,000. Plans deposit $100. Associated Architects, 366-40th St., Oakland, archts. CD 3/7/55.

HEAVY CONSTRUCTION—LB & CA

▲ WASHINGTON—State Hy. Comm., Olympia.
Allied Structural Steel Co., 20 N. Wacker Dr., Chicago, Ill., CA $6,943,568, steel superstructure, 0.434 mi. Seattle freeway bridge across Lake Washington Ship Canal, on 7 piers, FAP No. BI-5-3(39)169, King Co. Bids Jan. 20. CD 1/22, under LB.

▲ OREGON—State Hy. Comm., Hy. Bldg., Salem, Ore.—Morrison-Knudsen Co., Hoge Bldg., Seattle, Wash., CA $1,329,640 (12 bidders), grading 5.68 mi. Grants Pass-Jackson County line section Pacific Hy. FAIP 1-5-1 (6). S.S. Josephine Co.;
Ore.—Gibbons & Reed, Box 4989, Portland, Ore., CA $506,487 (20 bidders), grading 6.02 mi. Hood River-Shogren section Columbia River Hy. FAIP I-80N (9) 61. Hood River and Wasco Counties. Bids Jan. 22. CD 1/13.

▲ CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento.
L. C. Smith Co. and Concar Ranch & Enterprises, 225 19th Ave., San Mateo, Calif., CA $3,226,721, grade, pave 4.4 mi. 6 lane Bayshore Freeway, US Hy. 101. Bypass between 0.7 mi. north of San Mateo Co. line and Stierlin Rd. near Mountain View, incl. bridges and interchange facilities, IV-S,M., Sel. 58 D, A, Pa, MVW, San Mateo and Santa Clara Counties. Bids Jan. 7, awarded Jan. 22. CD 1/9, under LB.

▲+ Ralph T. Viola, 16261½ Pine St., Oxnard, Calif., LB $1,298,000 (17 bidders), maintenance hangar at Naval Air Missile Test Center, Spec. 19545-58, POINT MUGU, CALIF. Dist. P. Wks. Office, Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Jan. 21. CD 12/30.

▲+ Price McNemar Constr. Co., Box 3157, Van Nuys, Calif., LB $1,472,000 (18 bidders), environmental simulation facility at Naval Air Missile Test Center, Spec. 19518-58, POINT MUGU, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Jan. 20. CD 1/9.

▲+ Wells Benz, Inc., 1357 7th Ave., San Diego, Calif., CA $4,648,015, Launch Complex No. 1, Naval Missile Facility, Point Arguello NBy 19453, Spec. 19453-58, POINT MUGU, CALIF. Dist. P. Wks. Office, Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Dec. 30. CD 1/7, under LB.

▲+ Gordon H. Ball, 300 Camille Ave., Danville, Calif., CA $1,782,590, Sched. B, runway primary strengthening and facilities, McClellan Air Force Base, Spec. 2340 A, ENG-04-167-59-17, SACRAMENTO, CALIF. U. S. Eng., 1209 8th St., Sacramento, Calif. Bids Jan. 9, awarded Jan. 18. CD 1/14, under LB.

BUILDINGS—LB & CA

▲ M. Morrin & Sons, 473 W. 2nd St., Ogden, Utah, CA $1,055,000, 2 story, steel frame BANK, 25th and Washington Sts., OGDEN, UTAH. Commercial Security Bank, 2453 Washington Blvd., Ogden, Utah. Bids Jan. 9. CD 1/21, under LB.

▲+ Hoffman Constr. Co., 715 S.W. Columbia St., Portland, Ore., LB EST $2,600,000, build and lease POST OFFICE TERMINAL ANNEX and GARAGE FACILITIES,

TRICKY TRACINGS

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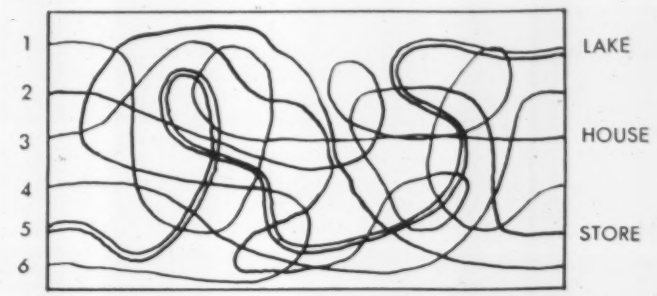

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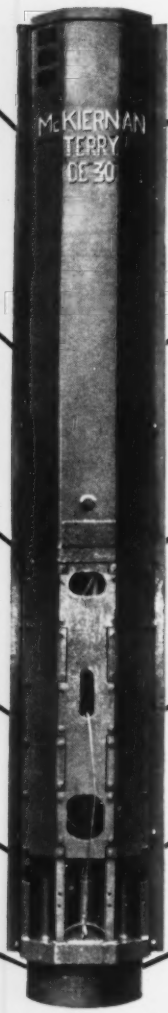

McKIERNAN-TERRY CORP.
80 RICHARDS AVE., DOVER, N. J.

for leasing by Post Office Dpt., 12th and Pennsylvania Ave. N.W., Wash, D. C., SPOKANE, WASH. General Services Admin., P. Bldg. Admin., General Services Bldg., Wash., D. C. Bids Jan. 20. CD 11/7.

▲ O. L. Carpenter, P. O. Box 206, Lemon Grove, Calif. CA $1,527,500, Lakeside HIGH SCHOOL, GROSSMONT, CALIF. Grossmont High School Dist., Grossmont, Calif. Bids Dec. 16. CD 12/22, under LB.

▲ Williams & Burrows, Inc., 500 Harbor Blvd., Belmont, Calif. CA $3,746,670, 300 unit low rent PUBLIC HOUSING, involving eight 5 story rein-con. apartment houses and twenty-one 1 and 2 story, concrete block-and frame constr., 1 story admin. bldg. and 300 dwelling units, CAL 52-1, MARIN CITY, CALIF. Marin County Housing Auth., P. O. Box 336, Marin City, Calif. Dudley Deane, 182-2nd St., San Francisco, Calif., engr. CD 12/22, under LB.

▲ Marvin E. Collins Co., 5635 San Diego St., El Cerrito, Calif., LB $1,394,000, King JUNIOR HIGH SCHOOL, OAKLAND, CALIF. Oakland City Unif. School Dist., 1025-2nd Ave., Oakland, Calif. Confer & Willis, 366 40th St., Oakland, Calif., archts. CD 6/8/56.

▲ Rothschild, Raffin & Weirick and Continental Constr. Co., Inc., 274 Brannan St., San Francisco 7, Calif., LB $2,348,000 (9 bidders) joint venture, general constr. six 3 story about 230,000 sq. reinforced brick, concrete Student RESIDENCE HALLS, San Jose State College, W.O. 4005GC-72, SAN JOSE, CALIF. State Div. Architecture, 1120 N. St., Sacramento, Calif. Bids Jan. 20. CD 12/30;
Anderson & Rowe, Inc., 2501 Harrison St., San Francisco, Calif., LB $457,738 (9 bidders) heating work (San Jose, Calif.)

▲ C. F. Braun & Co., 1000 S. Fremont Ave., Alhambra, Calif., CA $7,500,000, PETRO-CHEMICAL PLANT, WILMINGTON, CALIF. American Chemical Corp., 5313 Venice Blvd., Los Angeles, Calif.

CANADA

BUILDINGS—BA

▲ Que., Montreal—PLANT—BA 2/19—Kraft Foods Inc., 8600 Devonshire Rd., 1 story, 180,000 sq. ft. brick, block plant, $1,500,000. T. Pringle & Sons Ltd., 4795 Sherbrooke St. W., engrs. CD 7/28.

BUILDINGS—LB & CA

▲ Ralph M. Parsons Co. of Canada Ltd., 170 University Ave., Toronto, Ont., CA $4,000,000, Stage 3, SULPHUR PLANT, 13 mi. southeast of PINCHER CREEK, ALTA. British American Oil Co. Ltd., 800 Bay St., Toronto, Ont.

▲ Greenwin Constr. Co. Ltd., 3130 Bathurst St., Toronto, Ont., Owner Builds, $1,554,930, 176 unit, steel, low rental HOUSING, southwest corner Bathurst St. and Finch Ave., TORONTO, ONT. Jas. A. Murray, 440 Bayview Ave., Toronto, Ont., archt. CD 10/24.

▲ Miron Freres Ltee, 2201 Cote St. Michel Rd., Montreal, Que. Owner Builds, $12,000,000, 8,000,000 bags a year CEMENT PLANT, east of Papineau Ave., Michel, MONTREAL, QUE. CD 12/5.

U. S. POSSESSIONS

HEAVY CONSTRUCTION—LB & CA

▲† A. C. Samford, Inc., Box 1229, Albany, Ga., LB $1,394,960, redevelopment airport, Alexander Hamilton Airport, Proj. SC2-18-40, St. Croix, VIRGIN ISLANDS. Govt. of Virgin Islands, Contracting Officer, Div. Procurement, Kings St., St. Croix, Virgin Islands. Bids Jan. 15. CD 11/17.

PROPOSED PROJECTS

WATER SUPPLY

▲ Calif., Oakland—East Bay Municipal Utility Dist., 2130 Adeline St., Briones Dam and Reservoir, Briones Valley near Bear Creek Rd., Kaiser Engineers Div., Henry J. Kaiser Co., 1924 Broadway, consult. engrs., Constr. 1960. CD 6/9/58; 2nd Lafayette tunnel from Lafayette Filter Plant to Orinda Filter Plant, Mokelumne River Proj., Kaiser Engineers Div., Henry J. Kaiser Co., 1924 Broadway, consult. engrs., CD 9/25.

▲ N. J., Camden—City, City Hall, Morris Station Water Treatment Plant, $1,500,000, Constr. for 1959 water standpipe, Morro Phillips tract, $1,100,000, Constr. about 1964 water mains, various locations, $504,000, Constr. 1960 through 1963. George C. Rogers, city engr.

▲ N. Y., Grand Island—Grand Island Twps., water treatment facility, $2,000,000. Nussbaumer, Clark & Velzy, 327 Franklin St., Buffalo, consult. engrs. CD 8/24/56.

▲ N. Y., Tonawanda—Town, Village Hall, Kenmore, N. Y., 5 m.g. water storage facilities and distr. sys. in northern area of Twp., $1,500,000; water storage tank and distr. pipe lines, Green Acre Area, $1,000,000. Nussbaumer, Clark & Velzy, 327 Franklin St., Buffalo, consult. engrs. CD 8/27/56.

SEWERS, WASTE DISPOSAL

▲ N. J., Camden—City, City Hall; sewers, 10th St. and Kaigh Ave. Over $1,000,000, George C. Rogers, city engr. CD 12/18.

▲ N. Y., Buffalo—Erie Co. Sewer Auth., City Hall, sewerage sys. Lake Ave., Lake Shore Rd., Highland-on-the-Lake, Towns of Evans and Angola, $2,400,000. Nussbaumer, Clark & Velzy, 327 Franklin St., consult. engrs.

▲ Pa., Emmaus—Town, Town Council, sanitary sewerage sys. $3,272,000. Gilbert Assocs., Inc., 525 Lancaster Ave., Reading, consult. engr. Constr. 1960. CD 11/8/57.

BRIDGES

▲ ALABAMA—U. S. National Park Services, Wash., D. C.,
Lauderdale Co.—steel, concrete bridge over Tennessee River, Natchez Trace Parkway, $5,000,000. Palmer & Baker, 2460 Government St., Mobile, consult. engrs.

▲ Del., New Castle—Pennsylvania R.R., D. J. Henry, ch. engr., Transportation Center, 6 Penn Center Plaza, Phila. 4, Pa., railroad bridge over Chesapeake and Delaware Canal, $7,500,000. Howard Needles, Tammen & Bergendoff, 99 Church St., New York, N. Y., consult. engrs., preparing report.

▲ Ill., Chicago—Dpt. Purchases, City, City Hall, Zone 2,
overpass bridge, South Rte. Expressway and 31 St., $575,000.
concrete highway bridge, Fulton St. and Northwest Expressway, $500,000.
overpass bridge, Harrison St. and South Rte. Expressway, $1,430,000.
overpass bridge, South Rte. Expressway and Pershing Rd., reconstr. Pershing Rd. sewer, $1,000,000.
overpass bridge, Polk St. and South Rte. Expressway, $600,000.
overpass bridge, Roosevelt Rd. and South Rte. Expressway, $650,000.
overpass bridge, Taylor St. and South Rte. Expressway, $500,000. Bids in 1959. CD 6/10/57.

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Framingham—interchange and railroad crossing elimination, Edgell Rd., Framingham Center, $20,000,000. Tekton Assoc., Inc., 200 W. Central St., Natick, Mass., consult. engr.
railroad grade crossing, bridges, tearing up railroad, etc., $15,000,000. DeLeuw-Cather & Brill, 351 Boylston St., Brookline, Mass., consult. engrs. Constr. 1960-1961.

▲ NEW YORK—Dpt. P. Wks., State Office Bldg., Albany,
Queens Co.—fixed span bridge over Flushing River, Whitestone Hy., Flushing. (FAI). $10,000,000. To go ahead 1960.

▲ WASHINGTON—State Hy. Comm., Olympia,
Douglas Co.—bridge, grading and surf. 1.23 mi. approaches over Columbia River, Chelan Station, $1,081,500. Bids 1960.
Ferry Co.—reconstr. G. N. Railway overcrossing, Primary St. Hy. 4, Republic, $108,000. Bids 1960.
Okanogan Co.—bridge over Chewak River, Primary St. Hy. 16, Winthrop, $94,200. Bids 1959-60.
Skagit Co.—bridges 14.9 mi. Primary St. Hy. 1, Primary St. Hy. 1-CD to Samish Inn, $1,376,900. Bids 1960.
reconstr. 4 bridges, Secondary St. Hy. 1-C, Avon, $97,000. Bids 1959.

STREETS AND ROADS

▲ NEW YORK—State Dpt. P. Wks., State Office Bldg., Albany, Zone 1,
Cortland Co.—4½ mi. section Empire Stateway from Broome-Cortland county line thru village of Marathon, generally paralleling existing Rte. 11, FAI Proj., $1,000,000.

▲ Tex., San Antonio—Bexar County, Comrs. Court, Prec. 3, Courthouse, voted bonds Jan. 17, 87 mi. road constr. and imprvs. $2,170,000. CD 11/21.

▲ WASHINGTON—State Hy. Comm., Olympia,
Douglas Co.—grading, surf. 1.7 mi. Secondary St. Hy. 10-D, Twin West Orchards to McLean Orchards, $171,700. Bids within two years.
grading, surf. 7.17 mi. Secondary St. Hy. 10-B, Mansfield to Simms Corner, $258,000. Bids 1959-60.
grading, surf. 1.3 mi. Primary St. Hy. 10, Rock Island Dam vicinity, $707,500. Bids 1959-60.
grading, surf. 6.93 mi. Primary St. Hy. 2, Rocky Reach to Orondo, $703,600. Bids 1959-60.
Island Co.—grading, surf., paving 2.88 mi. Secondary St. Hy. 1-D, Lone Lake to Freeland, $422,200. Bids 1959-1960.
Skagit Co.—grading 1 mi. Secondary St. Hy. 17-A, Concrete, $131,300. Bids 1960. CD 3/26/57.
grading, surf., paving and bridges 3 mi. Primary St. Hy. 1, from Swinomish channel to Secondary St. Hy. 1-D, $1,292,400. Bids 1959-1960.
Whatcom Co.—resurf. and shoulders on Primary St. Hy. 1, Austin Pass branch, Bellingham to Nugents bridge, $90,000. Bids 1959.
grading, surf., paving and bridges on 6.41 mi. Primary St. Hy. 1, Samish Inn to Field St., Bellingham, $5,559,200. Bids 1959.

EARTHWORK, WATERWAYS

▲† Alabama—Tennessee Valley Auth., New Sprankles Bldg., Knoxville, Tenn. 500,000 kw. thermal power plant, Sheffield, $85,000,000 (no appropriation).

▲† Missouri-Illinois—U. S. Eng., 420 Locust Ave., St. Louis 2, Mo., low water dam across Mississippi River below Chain of Rocks bridge between St. Louis, Mo. and Madison Co., Ill. $5,802,000. R. W. Booker & Assocs., 1722 Olive St., St. Louis 3, Mo., consult. engrs.

▲ Ore., Eugene—Water & Electric Bd., City Hall, Carmean Dam on McKenzie River, Smith and Trail Bridges on Smith River, $19,000,000. FPC granted license. CD 3/5/58.

▲ Tex., Houston—City, City Hall, dam and reservoir, 1,100,000 gal. per day, Trinity River, near Livingston, $30,000,000, salt water barrier between Trinity River and Ocean Waters near Livingston, Wallisville, $10,000,000.

AIRPORTS

▲† Ark., Cabot—MISSILE STATION—Air Defense Command, Fourth Region, Richard Gebaur Air Force Base, Grandview, Mo., Nike Hercules Missile Battery Station, incl. administration bldg., mess hall and barracks to protect Little Rock Air Force Base. $1,000,000-$2,000,000.

▲† Ark., Conway—MISSILE STATION—Air Defense Command, Fourth Region, Richard Gebaur Air Force Base, Grandview, Mo., Nike Hercules Missile Battery Station, incl. administration bldg., mess hall and barracks to protect Little Rock Air Force Base. $1,000,000-$2,000,000.

▲ Alta., Edmonton—TERMINAL—Dpt. Transport, Hunter Bldg., Ottawa, Ont., plans by Rensaa & Minsos, 9130 Jasper Ave., terminal bldg. at airport. $6,000,000.

LATIN AMERICA

▲ El Salvador—BANK—Banco Hipotecaria de El Salvador, San Salvador, plans by Raymond R. Shaw, 649 S. Olive St., Los Angeles, Calif., U. S. A.; 3 to 5 story, 150,000 sq. ft. reinforced concrete bank. $3,000,000. Wm. D. Coffey, 649 S. Olive St., Los Angeles, Calif., U. S. A., consult. engr.

PUBLIC BUILDINGS

▲ Ark., Little Rock—SCHOOL—Pulaski Co., Special School Dist. voted $2,500,000 bonds Dec. 6. Senior High School, elementary school at Cloverdale and elementary school, Brady area, west of here. CD 10-23.

▲ Colo., Littleton—HOSPITAL—Arapahoe County. Plans by J. Philip Britton, 2051 South Oneida, Denver, county hospital, Broadway, north of Ridge St. $4,000,000. CD 12-5.

▲ Conn., Hartford—SCHOOL—Town Bd. Educ., 249 High St., plans by Willard Wilkins, 945 Asylum Ave., North-East Elementary School. $2,200,000. CD 11-10.

▲† Conn., New London—DORMITORY—U. S. Coast Guard Academy, Mohegan Ave., classroom and dormitory. $7,000,000, no appropriation. CD 10-3; under Groton, Conn.

▲ Conn., Wilton—HOUSING—Senior Foundation, Inc., 14 Belden Ave., Norwalk, plans by Howard & Thorne, 58 E. State St., Westport, housing for aged, incl. admin. bldg., 4 dormitories, underground tunnels connecting all bldgs.; lake, recreation bldg.; library, along Norwalk River. $1,000,000.

▲ Del., Wilmington—SCHOOL—Bd. Educ., Wilmington, Northeast High School. $1,320,000. Bids soon. CD 3-11-46.

▲ Fla., Tallahassee—OFFICE—City Comn., City Hall, plans by Ernest Stidolph, 313 N. Monroe St., 9 story, City Office Bldg. $4,500,000.

▲ Ga., Fort Oglethorpe—HOSPITAL—Hutcheson Memorial Tri-County Hospital, hospital addns. $3,000,000. CD 9-26-57.

▲ Ill., Antioch—SCHOOL—Antioch Twp. High School, 1134 S. Main St., bond election Mar. 14, high school, Loon Lake and Deep Lake Rds. $1,000,000. Gilbert A. Johnson, American National Bank Bldg., Rockford archt.

▲† Ill., Chicago—COURT HOUSE, etc.—General Services Admin., 18 and F Sts., N.W., Wash., D. C., federal court house and office, Dearborn, Jackson and Adams Sts. $65,000,000.

▲ Ill., Waukegan—SCHOOLS—Bd. Educ., 574 McAllister St., bond election Mar. 10, Junior High School, north area, $1,200,000, Swanson & Ladehoff, 523 S. Genesee St., archts.; elementary school, Blanchard Rd. near Glen Flora Country Club, $573,000; elementary school, Castle Crest subdivision, $573,000, Ganster & Henninghausen, 222 Washington St., archts.

▲ Iowa, Mason City—SCHOOL—Bd. Educ., $1,350,000 bond election Feb. 10, 1 and 2 story, 105,500 sq. ft., masonry, steel frame high school. CD 1-30.

▲ Md., Towson—SCHOOL—Baltimore County, Bd. Educ., Aigburth Rd., Zone 4, plans by Smith & Vale, 2127 N. Charles St., Baltimore, Zone 18, Security Senior High School, Dogwood Rd., Woodlawn, $4,000,000. V.R.P. Saxe, 1701 St. Paul St., Baltimore, Zone 2, structural engr.; Egli & Gompf, 1003 N. Calvert St., Baltimore, Zone 2, mechanical engrs.

▲ Mass., Watertown—SCHOOL—Town, High School Bldg. Comn., Supt. Schools, Common St., plans by Rick & Tucker Assoc., 45 Newbury St., Boston, high school addn., alterations, Columbia St. $1,375,000. CD 12-3-56.

▲ Minn., St. Paul—HOSPITAL—Ramsey County Welfare Bd., 476 St. Peter St., plans by Ellerbe & Co., E. 505 First National Bank Bldg., Anoker Hospital, 495 Jefferson Ave., $8,000,000-$16,000,000. CD 1-23-57.

▲ Miss., Meridian—HOSPITAL—City, City Hall, brick hospital. $4,000,000.

▲ Mo., Hazelwood (St. Louis 21 P. O.)—SCHOOL—School Dist. of Hazelwood R-1, Parker Rd. near Old Hall's Ferry Rd., St. Louis County, Zone 38, $1,100,000 bond election Feb. 10, Elm Grove, Russell, Parker and Larimore School addns., incl. bus repair garage. CD 5-14.

▲ Mo., St. Louis—PARKING GARAGE—City, Bd. P. Service, 404 City Hall, Zone 3, plans by Eugene J. Mackey, c/o Murphy & Mackey, archts., 6124 Enright Ave., Zone 12, multi-storied parking garage with facilities for 3,000 vehicles in vicinity of 15th St. and Clark Ave. $5,400,000.

▲ Mo., St. Louis—HOUSING—St. Louis Housing Auth., 2031 Olive St., Zone 3, public housing, incl. 850

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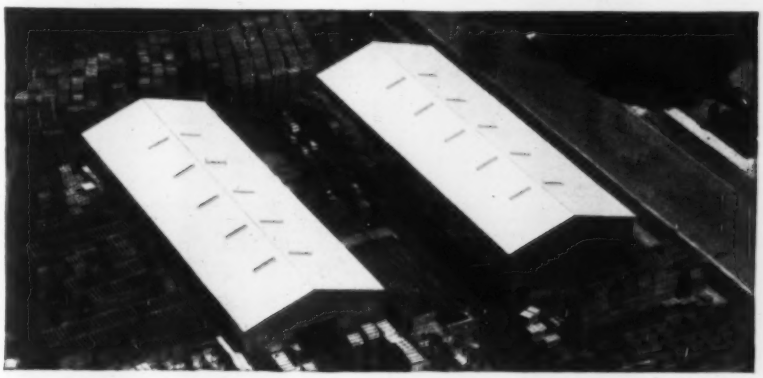

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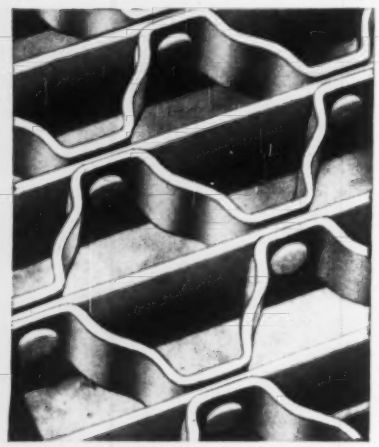

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dwelling units, Grand Blvd. between Easton Ave. and Delmar Blvd. Over $5,000,000. Constr. several years off.

▲ **N. J., Carteret**—SCHOOL—Bd. Educ. plans by Murray Leibowitz, 214 Smith St., Perth Amboy, school, Carteret Ave., $1,241,528, school to replace Columbus School, $725,403. CD 10/23.

▲ **N. J., Eatontown**—SCHOOL—Monmouth Regional High School Dist., voted bonds and approval of project at referendum Jan. 6, high school. $1,675,000. Wiedersum Assocs., 85 W. Hawthorn Ave., Valley Stream, N. Y., archts. CD 11/26.

▲ **N. J., Franklinville**—SCHOOL—Franklin-Elk Twp. Regional School Dist., Gloucester Co., voted $1,750,000 bonds Jan. 13. Regional High School and site purchase. Micklewright & Mountford, E. Stuyvesant Ave., Trenton, archts. CD 1/13.

▲ **N. J., Mays Landing**—SCHOOL—Greater Egg Harbor Regional High School Dist., voted $2,250,000 bonds Dec. 2, Regional High School, The Ballinger Co., 1625 Pace St., Phila., Pa., archt-engr. CD 10/30.

▲ **N. Y., Buffalo**—SCHOOL—Bd. Educ., City Hall, plans by Foit & Baschnagel, 232 Delaware Ave., Junior High School, E. Utica St. at Offerman Stadium site. $1,800,000. CD 7/11.

▲ **N. Y., Buffalo**—LIBRARY—Bd. Supervs. Buffalo and Erie Co. Library Bd., plans by Harbach & Clark with James Kideney & Assocs., 220 Delaware Ave., main library, Lafayette Sq. $10,000,000. Kideney, Smith & Fitzgerald, 220 Delaware Ave., consult. engrs. Jacobus & Babinsky, 395 Cleveland Dr., Cheektowaga, electrical engrs. Thomas M. McKaig, 881 Main St., structural engr. CD 7/11.

▲ **N. Y., Lockport**—SCHOOL—Starpoint Central School Dist., Mapleton Rd., voted $1,245,000 bonds Dec. 16, school addn. CD 12/15.

▲ **N. Y., Long Beach**—SCHOOL—City, City Hall, defeated $2,800,000 bonds Dec. 9. Monroe Blvd. School, Lido Junior High School addn., Lido Elementary School addn. and administration bldg. $3,100,000. Urbahn, Brayton & Burrows, 654 Madison Ave., New York, archts. CD 11/21.

▲ **N. Y., Lynbrook**—SCHOOL—Bd. Educ. Union Federated School Dist. No. 20, voted referendum Dec. 10, two Junior High Schools and Lynbrook High School addn. $3,750,000. CD 11/18.

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, 400 apartment, block between Columbus and Amsterdam Aves., between West 90th and West 91st Sts. $7,600,000 (state).

▲ **N. Y., New York**—HOUSING—New York City Housing Auth., 299 Broadway, Zone 7, 400 apartment between Hutchinson River Parkway and Westchester Creek from Wenner Place to Lafayette Ave., Bronx Boro. $6,480,000 (federal).

▲ **N. Y., Niagara Falls**—SCHOOLS—Bd. Educ., Admin. Bldg., plans by Shakelton & Fitzgerald, 1513 Lockport, 3 elementary school addns., Ferry Ave., 22nd St. and 24th St. $1,500,000.

▲ **N. Y., North Tonawanda**—SCHOOL—Bd. Educ., 236 Goundry St., bond election Mar. 17. Senior High School. $3,250,000. Pfohl, Stoll & Roberts, 187 Niagara St., Buffalo, archts. CD 1/16.

▲ **N. Y., Rochester**—SCHOOLS, etc.—Bd. Educ., 13 S. Fitzhugh St.
School No. 29. $900,000.
2 schools, Baden-Ormand Redevelopment Area, $2,035,000.
School No. 30, Otis St., $920,000.
elementary school, Charlotte High School Area, $850,000.
City School No. 35, $1,250,000.
School southwest section, $1,825,000.
School No. 54, Waring Rd., $1,500,000.
Bd. Education-Administration Bldg., $1,300,000. CD 8/22/46.

▲ **N. Y., Sloan**—SCHOOL—Sloan Bd. Educ., Junior-Senior High School. $2,000,000.

▲ **N. Y., Woodmere**—SCHOOL—Bd. Educ. Dist. 14, Woodmere, voted referendum Dec. 10, Junior High School, Peninsula Blvd. west of Mill Rd. $2,840,000. Frederic P. Wiedersum Assoc., 65 Roosevelt Ave., Valley Stream, archts. CD 11/18.

▲ **O., Berea**—SCHOOL—Bd. Educ., 390 Fair St., bond election Mar. 31, Junior High School. $2,350,000. Mellenbrock, Foley & Scott, 20 Beech St., archts. CD 1/19.

▲ **O., Canton**—COUNTY HOSPITAL, etc.—Comrs. Stark Co., Court House, county hospital and home for the aged. $1,714,020.

▲ **O., Canton**—COUNTY JAIL—Comrs. Stark Co., Court House, county jail. $2,309,475.

▲ **Pa., Phila.**—SCHOOL—Bd. Educ., 21st and Parkway, plans by Francis Cauffman, Wilkinson & Pepper, 204 W. Rittenhouse Square, Kenderton Elementary School, 15th and Ontario Sts. $1,300,000. Keast & Hood, 12 S. 12th St., engrs. CD 12/16.

▲ **Tex., Houston**—FIELD HOUSE, etc.—University of Houston, 3801 Cullen Blvd., plans by Lloyd & Morgan, 4605 Montrose Blvd., 9,000 seating cap. field house, $1,000,000. CD 11/29/57; physical education, $500,000.

▲ **Tex., Tyler**—SCHOOL—Tyler Ind. School Dist., Tyler, Junior High School (Negro), adjacent to Woldert Park. $1,250,000. CD 6/27.

▲ **Wash., Cheney**—DORMITORIES, etc.—Eastern Washington College of Education men's dormitories and dining center. $2,453,500. CD 9/23/57.

▲ **N. S., Sydney**—SCHOOL—Municipality of Cape Breton, Sydney, vocational school, $1,500,000.

▲ **Ont., Ottawa**—COLLEGE—Ontario Dpt. P. Wks., Parliament Bldgs., Toronto, Teachers College, Alta Vista Dr. $2,000,000.

▲ **Ont., Toronto**—GARAGE—Municipality of Metropolitan Toronto, 67 Adelaide St. E., central overhaul and repair garage, Keating St., east end of city, for Public Works Dpt. $1,200,000.

COMMERCIAL BUILDINGS

▲ **Calif., Mountain View**—HOME SUBDIVISION—Owner, c/o T. P. Constr. Co., 2930 Monroe St., Sunnyvale, 600 home subdivision North of Bayshore Hy. $7,000,000.

▲ **Calif., Palm Springs**—HOTEL—Star of The Desert Hotel Corp., Bermuda Dunes, Palm Springs, plans by Neotune & Thomas, 742 Colorado Blvd., Los Angeles, 7 story Bermuda Dunes Hotel. $4,500,000. Wexler & Harrison, Palm Springs, consult. engrs.

▲ **Calif., San Diego**—OFFICE, etc.—Heller Investment Co., 6th Ave. and Cedar St., plans by Frank L. Hope and W. F. Wilmurt, 1447 6th Ave., San Diego, 13 story, 30,000 sq. ft. office and apartment. $3,000,000.

▲ **Calif., Van Nuys**—MISSILE and RADAR CENTER—Radio Corp. of America, 30 Rockefeller Plaza, New York 30, N. Y., plans by Nelson Rice, 354 S. Spring St., Los Angeles, missile and radar center, 1 and 2 story, masonry, glass, porcelain-on-steel curtain, walls production engineering and administration bldgs. (1st phase—3 engineering bldgs., admin., cafeteria and production bldg.).

▲ **Colo., Denver**—RESEARCH—University of Denver, Campus, plans by Perkins & Will, 309 W. Jackson, Chicago, Ill., research bldg. $4,000,000-$5,000,000. CD 11/25.

▲ **Colo., Denver**—APARTMENT—Mrs. Anna E. Young & Edward T. Young, 2233 South Jackson, plans by O'Neil Ford & Carl Gross, Jr., 1301 Pennsylvania, 15 story, Twin tower apartment, Cherry Creek Shopping Center. $3,500,000.

▲ **Colo., Pueblo**—HOTEL—Park Hotel Corp., 512 Yale Blvd., Southeast, Albuquerque, N. M., plans by William E. Burk, Jr., 512 Yale Blvd., Southeast, Albuquerque, N. M. 147 room, 55,593 sq. ft. hotel. $1,559,000.

▲ **Conn., Bridgeport**—DORMITORIES—University of Bridgeport, 200 Park Place, plans by C. Wellington Walker, 114 State St., 2 dormitories. $1,600,000.

▲ **Conn., Hartford**—SCHOOL—Archdiocese of Hartford Chancery Office, 140 Farmington Ave. plans by Anthony J. DePace, 151 W. 46 St., New York, N. Y., Roman-Catholic High School, Campfield Ave. $1,000,000. CD 8/21/56.

▲ **Fla., Largo**—RESIDENCES—Largo Villa, Inc., 202 Empire Bldg., St. Petersburg, plans by Rader & Assocs., 611 1 Ave. N., St. Petersburg, 320 residences, $3,000,000.

▲ **Ga., Macon**—SHOPPING CENTER—Fickling & Walker, Inc., 240 2 St., plans by Bernard Webb, 763 Pine St., shopping center, Pio Nono Ave. $2,000,000.

▲ **Ill., Bloomington**—OFFICE—Illinois Agricultural Assn., 43 E. Ohio St., Chicago, plans by Graham, Anderson, Probst & White, Inc., 201 N. Wells St., Chicago, Zone 6, 10 story office. $5,000,000. CD 11/25.

▲ **Ill., Chicago**—COLLEGE IMPROVEMENTS—Catholic Bishop of Chicago, 719 N. Wabash Ave., plans by Naess & Murphy, 80 E. Jackson Blvd., Zone 4, auditorium, $1,000,000; chapel, $700,000; liberal arts college and library, $700,000, Mt. Carmel College, 64 St. and Blackstone Ave. Bids in December, 1960.

▲ **Ill., Chicago**—HOTEL—Kabak Corp., c/o Bacon, Whipple & Co., 135 S. LaSalle St., plans by Naess & Murphy, 80 E. Jackson Blvd., 10 story hotel over air-rights Illinois Central R.R., Outer Dr. and 23 St. $10,000,000.

▲ **Ill., Skokie**—ADMINISTRATION and RESEARCH CENTER—Teletype Corp., 1400 W. Wrightwood Ave., Chicago, plans by Childs & Smith, 20 N. Wacker Dr., Chicago, Zone 6, 1 and 2 story, 30,000 sq. ft. administration bldg. and research center. $3,000,000. Bids in Spring. CD 12/12/57.

▲ **La., Baton Rouge**—SHOPPING CENTER—Commercial Properties Development Co., Commerce Bldg., plans by Dibolls-Kessels, 637 Pere Antione Alley, New Orleans, 400,000 sq. ft. shopping center. $5,000,000.

▲ **Md., Bethesda**—APARTMENT—Westwood Apartments, Inc., c/o John d'Epagnier, archt., 1004 Riply St., Silver Spring, 167 unit apartment, Newington and Alvia Sts. $1,700,000.

▲ **Mass., Cambridge**—HIGH SCHOOL—St. Peter's R. C. Parish, 1 Lake St., Brighton, plans by John A. McPherson, 250 Huntington Ave., Boston, Girls' High School, Concord Ave. $2,500,000. Bids February-March 1959.

▲ **Mass., South Weymouth**—SHOPPING CENTER—Owner, c/o Joseph Q. Scavuzzo & Co., 914 Washington St., Braintree, shopping center, Rte. 128 between Rtes. 3 and 18. $1,000,000-$1,300,000.

▲ **Mass., Worcester**—STORE, etc.—Garden Manor Corp., 145 Main St., store and office, Main, Scholl, Thomas and Commercial Sts. $2,000,000. Herbert Engineering, Inc., 151 Main St., engr. Constr. early 1959.

▲ **Minn., Minneapolis**—MOTEL—Downtowner Hotel, c/o United Parking Stations, Inc., 220 South Ninth St., 4 story and two 3 story units U-shape motel, South Seventh St. and Fourth Ave. $1,400,000. Constr. early 1959.

▲ **Minn., Minneapolis**—HOSPITAL—Mt. Sinai Hospital, 22nd St. and Chicago Ave., plans by Liebenberg & Kaplan, 51 South 13th St., 100-bed hospital wing, remodeling, 1959. $1,500,000. CD 12/31/57.

▲ **Mo., Columbia**—DORMITORY, etc.—Christian College, 8th and Roger Sts., second dormitory, incl. student

center, academic, physical education and chapel. Over $3,000,000.

▲ N. H., Manchester—SCIENCE, LIBRARY, etc.—St. Anselm's College, College Rd.; plans by Koehler & Isaak, archts., 1880 Elm St.; and Carl E. Peterson, assoc. archt., 1880 Elm St.; science, library, classroom and 3 dormitories, $4,000,000. Richard D. Kimball Co., c/o Beacon St., Boston, Mass., mechanical engr. CD 8-8-.

▲ N. J., Morristown—HOTEL—Hosinger & Bode, 29-28 41 St., Long Island City, N. Y., plans by A. W. Geiler, 333 E. 23 St., New York, N. Y., 215 room luxury type hotel, 2 Whippany Rd., $1,000,000.

▲ N. J., Rutherford, HOUSES—Van Winkle & Liggett, 24 Orient Way, 39 houses, Rte. 17, $1,000,000.

▲ N. Y., Amherst, HOUSING—Alston Homes, Inc., 604 Genesee Bldg., Buffalo, 40 housing subdivision, "Briarhurst Estates", $1,000,000.

▲ N. Y., Buffalo—HEALTH SCIENCE—University of Buffalo, 3435 Main St., plans by James Meadows & Howard, 250 Delaware Ave., Health Sciences, $2,200,000. W. L. Clark River Rd., Waterville, O., structural engr. CD 6/21/56.

▲ N. Y., New York—LAW SCHOOL, etc.—Fordham University, Fordham Rd., plans by Voorhees, Walker, Smith, Smith & Haines, 101 Park Ave., New York, N. Y., Downtown Campus.
1st phase: Law School and library, W. 62nd St., $6,000,000.
2nd phase: Schools of Business, Education, Social Service and General Studies, $6,500,000.
library, $1,000,000.
3rd phase: student union bldg., classrooms, bell tower, $12,000,000. CD 5/4/55.

▲ N. Y., Niagara Falls—OFFICE—Gluck Bldg. Corp., 10 Falls St., office rebuild, $1,250,000.

▲ N. Y., Rochester—HOTEL—Hotel Corp. of America, 400 Commonwealth Ave., Boston, Mass., 14 story hotel, $6,000,000.

▲ N. Y., Roosevelt—STORE—Roosevelt Field, Inc., c/o Webb & Knapp, Inc., 383 Madison Ave., New York, Zone 17, plans by Ammann & Whitney, 111 8th Ave., New York, N. Y.; Welton, Becket & Assocs., 11 W. 42nd St., New York, N. Y.; Copeland, Novak & Israel, 744 Lexington Ave., New York, N. Y., 2 story, bsmnt., 250,000 sq. ft. brick, stainless steel department Store, Old County Rd., $7,500,000. Gimbel Bros., Inc., New York, N. Y., lessee; Syska & Hennessey, 144 E. 39th St., New York, N. Y., consult. engrs. C-.

▲ N. Y., Syracuse—GYMNASIUM, etc.—University of Syracuse, plans by Harry King, 420 Genesee St., gymnasium and field house, $1,300,000.

▲ O., Canton—SHOPPING CENTER—Lake Plaza, Inc., 3131 Belmont Rd., Extension, Youngstown, 34-unit brick shopping center, northwest corner 12th St. and Whipple Rd., $2,400,000.

▲ O., Fairview Park (Br. Cleveland)—APARTMENT—Fairview Towers, 420 Caxton Bldg., Cleveland, Zone 15, plans by Adelbert B. Kleine, 420 Caxton Bldg., Cleveland, Zone 15, 8 story, 123 unit apartment, 20213 Lorain Rd., $1,600,000.

▲ O., Mayfield Heights—HOMES—Fenwick Constr. Co., 13493 Cedar Rd., Cleveland, Zone 18, 101 homes east of SOM Center Rd., south of Mayfield Rd., $2,500,000.

▲ O., Youngstown—APARTMENTS—Owners, c/o Harold Stein, Wick Bldg., 12 apartments, incl. 192 units, Lincoln Park, McCartney Rd. and Keystone Ave., $2,000,000.

▲ Tenn., Knoxville—APARTMENT—Walker Development Co., c/o Wallace E. Johnson, Inc., 875 Raynor St., Memphis, apartment bldg., $1,750,000.

▲ Tex., Corpus Christi—HOSPITAL, Sisters of Charity of Incarnate Word—c/o Spohn Hospital, 1436 3rd St., plans by Wade, Gibson & Martin, archts., 1101 S. Brownlee St., and O'Connell & Probst, hospital consults., 504 W. 7th St., Austin, 5 story, bsmnt., 200 x 175 ft., Spohn Hospital expan., $2,715,000. H. P. McElhaney, 525 Glazebrook, Corpus Christi, and Vernor & Callins, 304 Green Ave., Taft, consult. engrs. CD 4/22/57.

▲ Tex., Dallas—SHOPPING CENTER, etc.—Bachman Village Shopping Center, c/o Majors & Majors, 1st National Bank Bldg., shopping center, $3,500,000; 50 acre site earthwork development, $60,000; area and hard-paved parking center, $90,000, Lemmon and Northwest Hy.

▲ Tex., Fort Worth—HOTEL—Geo. H. (Jones, 4270 Ocean Dr., Corpus Christi, 1 and 2 story, masonry, steel, concrete, 150 unit motor hotel, $1,000,000.

▲ Tex., Fort Worth—MOTOR HOTEL—Rio Motor Hotels, c/o Geo. H. (Jones, 4770 Ocean Dr., Corpus Christi, 150 unit motor hotel, 6600 block, Camp Bowie Blvd., $1,000,000.

▲ Tex., Grand Prairie—APARTMENT—Dave Hicks & Co., Inc., 2444 W. Main St., Dallas, 144 unit Skyline Apartment, Small St., $1,265,000.

▲ Tex., Houston—MOTELS—International Motels, Inc., c/o Geo. Bregman, Bank of Southwest Bldg., five 2 story bldgs., 100 units, Motel No. 1, incl. swimming pool, Katy Rd., $1,000,000; five 2 story bldgs., 100 units, resort type Motel No. 2, incl. outdoor swimming pool, television, Hy. 73, $1,000,000; five 2 story bldgs., resort type Motel No. 3, incl. outdoor swimming pool, television, $1,000,000.

▲ Tex., Houston—SHOPPING CENTER, etc.—Southway Development Co., Hermann Prof. Bldg., plans by Truman D. Douty Assocs., Hermann Prof. Bldg., shopping center, $2,000,000, site work (grading, filling,

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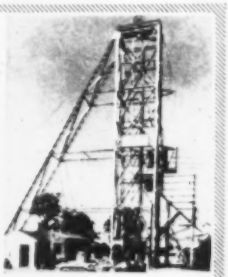

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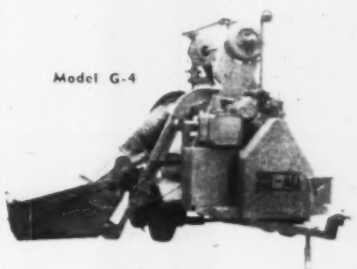

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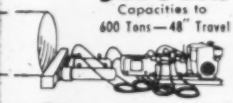

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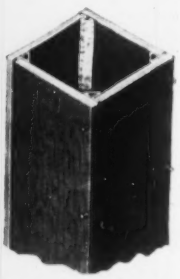

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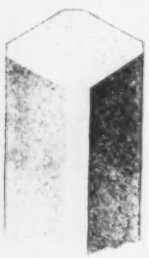

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leveling, drainage) $55,000, hard-paved area and auto center $90,000, College, Easthaven-Alabama and Genoa Sts., in South Houston.

▲ Tex., Port Arthur—SHOPPING CENTER, etc.—Gordon & Assocs., Julius M. Gordon, Calder Ave., Beaumont, shopping center, $3,000,000; site earthwork (grading, filling, leveling, drainage) $62,500, area and hard-paved auto center, $125,000.

▲ Utah, Salt Lake City—COLLEGE—L.D.S. Church, 47 E. South Temple St., Junior College, $1,000,000.

▲ Va., Alexandria—SHOPPING CENTER—Greenbelt Consumers Services, Inc., 121 Centerway Rd., Greenbelt, Md., plans by Hugh Johnson Assoc., Inc., 2000 P St., N.W., Wash., D. C., Penn Daw Shopping Center, Kings Hy. at Rte. US 1, south of here, $1,500,000.

▲ Va., McLean—SHOPPING CENTER—McLean Shopping Center, Inc., plans by Hugh Johnson Assoc., Inc., 2000 P St., N.W., Wash., D. C., shopping center, Chain Bridge Rd. near Old Dominion Dr., $1,000,000.

▲ Wash., Spokane—EXPOSITION DOME—Spokane Interstate Fair, Broadway and Havana Sts., community exposition dome bldg., fairgrounds, $1,000,000.

INDUSTRIAL BUILDINGS

▲ Calif., Fresno—BUS DEPOT—Greyhound Corp., c/o Executive Asst., Market and Fremont Sts., San Francisco, plans by Swartz & Hyberg, Rowell Bldg., bus depot H St. between Tulare and Mariposa Sts., $1,000,000.

▲ Calif., Los Angeles—WAREHOUSE, etc.—Catalina Knitting Mills, 441 S. San Pedro, plans by Stiles Clements, 210 W. 7th St., warehouse and office, $1,250,000. Bids about Mar. 15. CD 8-8-56.

▲ Ga., Augusta—PLANT—Continental Can Co., 100 E. 42 St., New York 17, N. Y., paperboard manufacturing plant, $45,000,000. J. E. Sirrine Co., 215 S. Main St., Greenville, S. C., consult. engrs. CD 12-12-22.

▲ Ky., Mayfield—PLANT—General Tire & Rubber Co., 1708 Englewood, Akron, O., plant to produce tires and other rubber products, $9,000,000.

▲ N. J., Secaucus—PLANT, etc.—Merchants Refrigerating Co., 17 Varick St., New York, N. Y., plans by Abbott-Merkt & Co., 10 E. 40 St., New York 17, N. Y., 2,000,000 cu. ft. plant and warehouse for frozen food, $1,000,000. CD 12-1.

▲ N. Y., Ithaca—ELECTRONICS RESEARCH CENTER—General Electric Corp., River Rd., Schenectady, N. Y., electronics research center near Tompkins County Airport, $1,000,000.

▲ Pa., Phila.—PLANT—Crown Cork & Seal Co., Inc., 9100 Ashton Rd., plant, Grant Ave. and Ashton Rd., $3,500,000-$4,000,000.

▲ Tennessee—PLANT—Tennessee Valley Auth., New Sprankles Bldg., Knoxville, Thermal Power Plant, Clinton on Clinch River, near Oak Ridge, $10,000,000.

▲ Tex., Bridge City—PLANT, etc.—Gulf States Utilities Co., 285 Liberty St., Beaumont, electric generating power plant, 750 acre site, $15,000,000; intake and discharge canal, $500,000; water wells, $125,000; cooling tower, $300,000; area lighting, $150,000.

▲ Tex., Pearsall—PLANT—Medina Electric Co-operative Inc., 66,000 kw steam electric generating plant, $11,480,000. Site changed! Constr. in March. CD 9-10 under Tex., Hondo.

▲ Wyo., Afton—PLANT—Callair, Inc. (Call Aircraft Mfg.), plant to provide for admin., manufacturing, distribution and selling area, $1,000,000.

▲ Que., Montreal—WAREHOUSE, etc.—General Motors of Canada Ltd., 4105 Cote de Liesse Rd., plans by A. Lewis Perry, 1434 St. Catherine St. W., 205,000 ft. warehouse and 39,000 sq. ft. general offices and service training center, Pointe Clair Industrial Area, $2,000,000.

▲ Que., Val D'Or—MINE SHAFTS—Sigma Mines (Quebec) Ltd., Bourlamaque, underground shafts, at mine property, $1,250,000.

UNCLASSIFIED

▲ Arkansas—GAS PIPE LINE—Arkansas Louisiana Gas Co., 4 and Louisiana, Little Rock, 100 mi. natural gas pipe line through Ouachita Mountains from Aetna gas field, Franklin Co. to Jones Mills between Malvern and Hot Springs, Franklin and Garland Counties, $6,000,000. CD 11-1-18.

▲ Ill., Hennepin—POWER STATION—Illinois Power Co., 134 E. Main St., Decatur, 225,000 kw power station, $24,800,000. CD 4-6-47.

▲ Miss., Pascagoula—PORT FACILITIES—Jackson Co., Pascagoula, port facilities, incl. 4 ship berths, Bayou Casotte, warehouses, bulk handling facilities, grain elevator, $10,000,000. Ewin Engineering Co., 150 Savannah, Mobile, Ala. and Henry V. Allen & Assoc., Lamar Life Bldg., Jackson, Miss., engrs., making preliminary surveys. CD 8-13-56.

▲ Tennessee and Kentucky—NATURAL GAS TRANSMISSION LINE—Clinton Gas Dist., c/o D. Varnell, Courthouse, Clinton, Tenn., natural gas transmission line between Clinton, Tenn. and Middlesboro, Ky. and distr. sys. for both industries, $1,000,000. Bids, Sept. Co., Goodwyn Institute Bldg., Memphis, Tenn., consult. engr.

▲ Tex., Houston—MARINA—Dickinson Bayou Marina Inc., Wm. F. Spencer, 4422 Benning St., marina 42½ acres on Dickinson Bayou, east of Gulf Freeway on Farm Rd. 517, $2,000,000.

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MORETRENCH CORPORATION

World's Oldest . . . Largest . . . Most Experienced Predrainage Organization

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Kinnear Steel Rolling Doors *introduced* the **single-shaft torsion spring.** It assures *uniform* spring action . . . *uniform* regulation of operating ease from a **single adjustment wheel.** Many other special features make Kinnear your best door buy! Send for catalog!

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25-Year Protection on Pneumatic Ejectors

Only Yeomans dares to back specifications with this long-term warranty...

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PNEUMATIC EJECTOR
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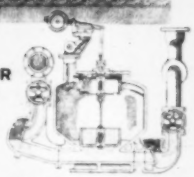


Twenty-Five Year Warranty

Subject to the limitations herein contained, YEOMANS BROTHERS COMPANY warrants its mechanically-controlled Shone Pneumatic Ejector against defects in workmanship and materials under normal use and service for twenty-five (25) years after installation as specified in factory recommendations. The Company's responsibility under this twenty-five year warranty is limited to replacing or repairing without charge, f.o.b., its works, any of the following components sewage or waste receiver mechanical air and exhaust control and the Shone inlet and discharge check valve. All other parts are subject to the manufacturer's warranty of one year.

Written notice must be given to the Company immediately upon discovery of any defect. The Company shall have the option of requiring the return of a defective component or material, transportation prepaid, before accepting a claim. In no event shall YEOMANS BROTHERS COMPANY be responsible or held liable for delay or damages of any kind or character resulting from or caused directly or indirectly by any defective component or material. This warranty shall not apply to any component or material repaired or altered outside of the Company's works unless the Company's written approval in that respect is first obtained and no allowance will be made for such repairs or alterations without the written consent or approval of the Company.

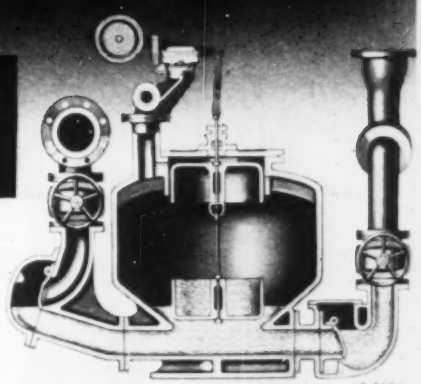
This Warranty is in lieu of all other warranties expressed or implied, and is in lieu of all other obligations or liabilities on the part of the Company. No other person is authorized to vary the terms or provisions hereof in any respect.

YEOMANS BROTHERS COMPANY
D. W. Burgoon
PRESIDENT

YEOMANS

1999-1 North Ruby Street, Melrose Park, Illinois

This is the SHONE with mechanical controls. It is the original pneumatic ejector. The first SHONE was installed in 1870.



E-5906

WORLD'S LARGEST AND BEST LINE OF PNEUMATIC EJECTORS

Reader's

Oh, what will you do without water?

America is using 167 million gallons of water a minute!

Demand increases by the hour. By the time today's toddlers are grown, we'll need *twice* as much water.

Where will it all come from? Will you have enough? You'll find the answer below . . .

Now, what can you do about water?

This free booklet, "*WATER—make sure you'll always have plenty*," tells how to learn if you're running short, what to do if you are. Write Cast Iron Pipe Research Assn., Prudential Plaza, Chicago 1, Ill.

Printed in your interest by the makers of America's greatest water carrier . . .

CAST IRON PIPE

New Ad Campaign in Reader's Digest Dramatizes America's Water Problem

Cast Iron Pipe Research Association promotes better understanding of water supply and distribution problems

Offers Informative Booklet for Step-by-Step Action at the Local Level

Here's help for consulting engineers and everyone else directly concerned with the supply, treatment and distribution of water—help that will acquaint the general public and community leaders with the vital importance of this growing problem.

On the opposite page you see the first in a series of advertisements, this one appearing in February *Reader's Digest*. Placed by the Cast Iron Pipe Research Association, these striking advertisements point out to Mr. and Mrs. America how much we depend on a good water system and why we can no longer take it for granted.

Similar advertising will appear regularly this year in *U. S. News & World Report*, *Nation's Business*, *Better Homes & Gardens*, *American Home* and *Sunset* magazines to carry this public service message to millions of community leaders and homeowners.

Free Local Plan-of-Action Booklet

These ads offer a free booklet telling about the water problem. It shows how responsible citizens can acquaint themselves with the needs of their community. It also gives a step-by-step outline of action, telling how they can help their officials extend and improve the local water system through more adequate rate structures or financing.

We'll be happy to send you a free copy of this new booklet. Write to Thos. F. Wolfe, Managing Director, Cast Iron Pipe Research Association, 3440 Prudential Plaza, Chicago 1, Ill.

THREE REASONS WHY CAST IRON PIPE IS *AMERICA'S GREATEST WATER CARRIER:*

1. More miles of underground cast iron water mains are now in use than of all other kinds of pipe combined.
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3. Impartial surveys prove that today's water utility officials and consulting engineers prefer cast iron pipe for underground water distribution by an overwhelming majority.

CAST IRON PIPE

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—LB & CA

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

M. DeMatteo Constr. Co., 200 Hancock St., Quincy, Mass., CA $3,390,983, section Interstate Hy. 93, 1-93-1 (13) 5 Stoneham-Winchester-Woburn. Bids Dec. 4. CD 12/12, under LB.

▲ CONNECTICUT—State Hy. Dpt., 24 Wolcott Hill Rd., Wethersfield.

Savin Bros., Inc., Cottage Grove Rd., Bloomfield, Conn., CA $3,871,720, concrete paving relocation Route 8, incl. ramps, side roads and temporary connection to existing roads at Thomaston Dam Project. Proj. 140-108. Bids Dec. 15, awarded Jan. 22. CD 12/17, under LB.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ N. J., Newark—PARKING GARAGE—BA 2/10—Prudential Insurance Co. of America, 763 Broad St., 5 story, brick parking garage, Plane St. between Bank and Academy Sts. $2,500,000. Voorhees, Walker, Smith, Smith & Haines, 101 Park Ave., New York, N. Y., archts. CD 1/14/58.

▲ Pa., Phila.—SCIENCE—BA 3/4—General State Auth., 18th and Herr Sts., Harrisburg, science bldg. for Temple University, Broad and Montgomery Aves. $3,200,000. Plans deposit $50, general constr., $15 others. Nolen & Swinburne, 1601 Locust St., Zone 3, archts. Severud, Elstad-Krueger Assocs., 415 Lexington Ave., New York, N. Y., engrs. CD 12/10.

HEAVY CONSTRUCTION—LB & CA

▲ Lefrak Organization, 97-27 64th Rd., Forest Hills, N. Y., Owner Builds, $6,000,000, 4 APARTMENTS, Shore Parkway, Guider Ave., Homecrest Ave. and East 14th St., addn. to Hollywood Park, BROOKLYN, N. Y. Jack Brown, c/o owner, archt. CD 2/1/57.

▲ Firbo Assocs., Inc., 20 South Broadway, Yonkers, N. Y., Owner Builds, $4,000,000, 15 story OFFICE, South Broadway and Nepperhan Ave., YONKERS, N. Y. Maurice A. Capobianco, 30 South Broadway, Yonkers, N. Y., archt.

▲ Woodcrest Estates, Attn. Harold Sarshik, Berlin Rd., Haddonfield, N. J., Separate Contracts, $3,000,000, 150 unit RESIDENTIAL DEVELOPMENT, ERLTON, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ Somers Point Development Co., 1080 Maple Ave., Linwood, N. J., Separate Contracts, $4,500,000, 300 unit RESIDENTIAL DEVELOPMENT, SOMERS POINT, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 18 Louisiana

BUILDINGS—BA

▲† Va., Fort Lee—HOUSING—BA On Or About 2/26—U. S. Eng., foot of Front St., Norfolk, Zone 1, 285 unit Capehart Family Housing, ENG-44-110-59-18. $4,480,000. CD 9/8.

BUILDINGS—LB & CA

▲† J. Kennon Perrin Co., 5th and Cary Sts., Richmond, Va., LB $2,978,564 (9 bidders) 134-200 bed HOSPITAL and HEATING PLANT, ENG-44-110-59-11, FORT LEE, VA. U. S. Eng., foot of Front St., Norfolk, Va. Bids Jan. 27. CD 12/22.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 18 Michigan
STREETS AND ROADS
February 11, 18 Michigan

BUILDINGS—BA

▲ Ill., Chicago — HOSPITAL — BA 2/25 — Illinois Div. Architecture, Armory Bldg., Springfield, pediatric hospital for mentally deficient. $5,000,000. Friedman, Alschuler & Sincere, 223 W. Jackson St., Chicago, assoc. archts. CD 9/22.

▲ Ind., Indianapolis—SCHOOL—BA 3/3—Warren Twp. Marion Co. School Bldg. Corp., Warren Central High School, E. 10 St. and Post Rd., high school, 16 St. and Post Rd., Warren Twp. $3,000,000. Everett I. Brown Co., Illinois Bldg., archt.-engr. CD 8/28.

▲ Mich., Detroit—POST OFFICE—BA 4/15—Bureau of Facilities, Div. Real Estate, Post Office Dpt., Wash. 25, D. C., build and lease post office, Fort St., W. West Jefferson Ave., 8th and 10th Sts. $19,000,000. Plans deposit $100. Giffels, Rossetti, 1000 Marquette Bldg., Detroit, Mich., archts.-engrs. CD 3/29/56.

HEAVY CONSTRUCTION—LB & CA

▲ S. N. Nielsen Co., 3059 Augusta Blvd., Chicago, Ill., LB $4,907,534 (7 bidders), Central Water Plant, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago, Ill. Bids Jan. 26. CD 1/20.

▲ Merritt-Chapman & Scott Corp., Standard Bldg., Cleveland, O., CA $3,486,363, South Side Water Intake, MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Jan. 23. Black & Veatch, 1500 Meadow Lake Parkway, Kansas City 14, Mo., engrs. CD 12/30.

BUILDINGS—LB & CA

▲ Alexander Constr. Co., 2201 E. Chey St., Colorado Springs, Colo., Owner Builds, $3,250,000, 1 story, 260,000 sq. ft. structural steel SHOPPING CENTER, park area, JOLIET, ILL.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 10 Iowa February 13, 14 Texas
February 20 Missouri
STREETS AND ROADS
February 10 Iowa February 12 Kansas
February 13, 14 Texas February 20 Missouri

BUILDINGS—LB & CA

▲ Universal Constr. Co., 1202 Southwest Blvd., Kansas City, Mo., CA Est. $4,000,000, 290,000 sq. ft. PACKING PLANT, OMAHA, NEB. Cudahy Packing Co., 33 and N Sts., Omaha, Neb. Awarded approx. Jan. 23.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 17 Washington
STREETS AND ROADS
February 13 Arizona February 25, March 5 California

HEAVY CONSTRUCTION—LB & CA

▲† English Electric Export & Trading Co., 23 Beaver St., New York, N. Y., LB $5,433,170 (5 bidders), 3 generators for Ice Harbor Dam on Snake River, CIVENG-45-164-59-14, WASHINGTON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Jan. 27. CD 12/31.

▲ Anderson Constr. Co., Inc., Central Bldg., Seattle, Wash., and Wilder Constr. Co., 1840 State St., Bellingham, Wash., CA $6,359,655, est. $5,777,982, (9 bidders), water storage dam on south fork of Tolt River, SEATTLE, WASH. City, County-City Bldg., Seattle, Wash. Bids Jan. 14, awarded Jan. 21. CD 1/19, under LB.

▲ CALIFORNIA—State Div. Hys., 1120 N St., Sacramento.

Gordon H. Ball, Gordon H. Ball, Inc., Ball & Simpson, and Lew Jones Constr. Co., 685 Delaware St., Berkeley, Calif., CA $3,870,609, grade, pave 4.1 mi. 4 lane freeway between 1st St. and 0.4 mi. north of Bayshore Hy., Nimitz Freeway and between 0.4 mi. north of Brokaw Rd. and 1 mi. south of Taylor St. on Bayshore Freeway in and near San Jose, Santa Clara Co. Bids Jan. 14, awarded Jan. 26. CD 1/16, under LB.

▲ CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento. Bids opened 1/28.

A. Teichert & Son, Inc., 3131 Stockton Blvd., Sacramento, Calif., LB $4,787,742 (9 bidders) grading, paving 7.8 mi. 4 lane freeway and constr. 3 traffic separation bridges, U. S. Hy. 40 between 0.7 mi. east of Baxter and 0.6 mi. west of Emigrant Gap, 111-Pla-37-D, E; Placer Co. CD 12/29.

BUILDINGS—LB & CA

▲ Mutual Constr. Co., c/o G. Balotin, archt., 915 E. Pine St., Seattle, Wash., CA Est. $3,500,000, 16 story, rein.-con. APARTMENT, 1100 University St., SEATTLE, WASH. Panorama House, Inc., c/o archt. CD 7/30.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 10 Manitoba
STREETS AND ROADS
February 17 Northwest Territories March 4 Ontario

BUILDINGS—LB & CA

▲ Fluor Corp., 2500 Atlantic St., Los Angeles, Calif., CA Est. $3,000,000, GAS PROCESSING PLANT, Nevis Gas Field, ALBERTA. Standard Oil of California, et. al., 225 Bush St., San Francisco, Calif., U.S.A. CD 12/20/56.

▲ Perini Ltd., 150 Kent St., Ottawa, Ont. LB $2,835,000 (24 bidders) 5 story, 2 wings, NATIONAL RESEARCH COUNCIL COMMUNICATIONS BLDG., OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Jan. 14. CD 12/4.

▲ Perini Ltd., 44 Jackes Ave., Toronto, Ont. CA Est. $4,000,000, 14 story, 250,000 sq. ft. OFFICE, 130 Bloor St. W., TORONTO, ONT. Cemp Investments Ltd., c/o Bregman & Hamann, archts., 146 Bloor St. W., Toronto, Ont. Farkas & Barron of Canada Ltd., 7 Adelaide St., Toronto, Ont., engrs.

U. S. POSSESSIONS

HEAVY CONSTRUCTION—BA

▲† Canal Zone—BA 2/2—Panama Canal Co., Balboa Heights, widening 2 mi. from 300 to 500 ft., Paraiso-Cucaracha Reaches (Gaillard Cut) Panama Canal. $7,000,000-$9,000,000. Extended date. CD 1/2.

(Proposal Advertisements see pp. 88 to 90)

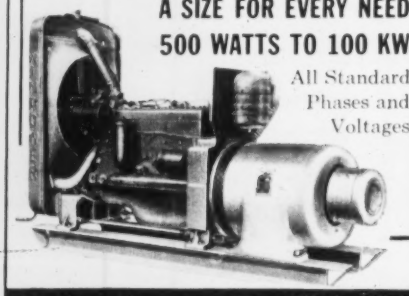
Power Plants Speed Construction

USE POWER TOOLS—FLOOD LIGHTS

WINPOWER PORTABLE ELECTRIC PLANTS

provide a dependable, low cost power source . . . speed up work performance by operating time and labor saving power tools. Wherever the job—whatever the need—you can count on a WINPOWER Electric Plant to meet your requirements.

A SIZE FOR EVERY NEED
500 WATTS TO 100 KW
All Standard Phases and Voltages



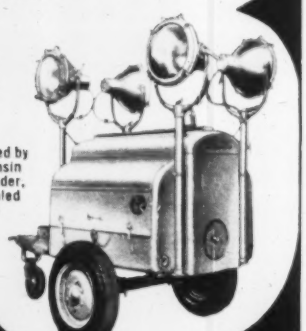
These rugged, heavy-duty 3-wheel dollies are used as a permanent mounting for 3, 4, and 5 KW electric plants where portability is desired by contractors, bridge builders, mine operators, road constructors, railroads, cities and municipalities.

Trailer-Mounted Floodlight Unit

MAKE NIGHT HOURS PAY with NITE-HAWK

Four 80,000 c.p. flood lights raise to 8½ ft.—aim in all directions. Control panel has duplex receptacles for extension light and power tool lines—voltage regulator—circuit breakers—fused circuits.

Tows at highway speeds on heavy-duty trailer with leaf springs—retractable caster wheel. This is the finest, most flexible unit available. 5 KW, 115 or 230 Volt.



Powered by Wisconsin 4 cylinder, air-cooled engine

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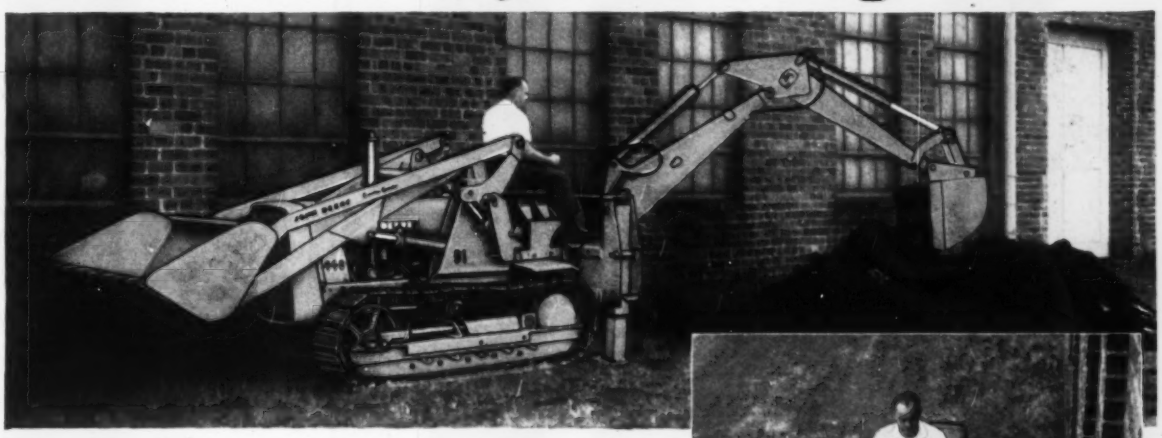
Here's REACH and POWER
to Tackle Any Trenching Job...



The *New* JOHN DEERE 5-POSITION BACKHOE

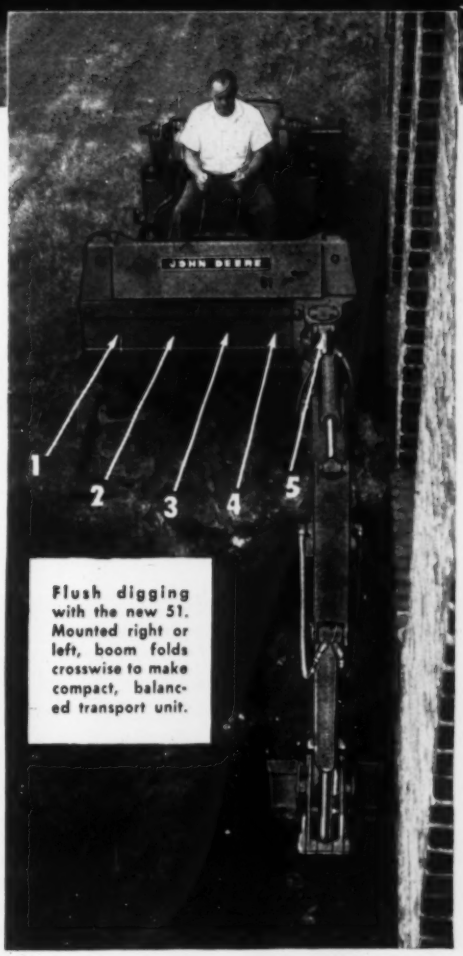
Reaching out over 20 feet at ground level, digging below 13 feet, dumping at a height of 11 feet, working closely to buildings or fences—the new John Deere 51 Backhoe gives you the kind of working performance you need to speed work and cut costs. What's more, there's plenty of leverage and husky hydraulic power for digging in hard or frozen soil.

And it's responsive, easily controlled digging power—just two control levers to operate.

FAST CHANGEOVER

Changing the mounting position of the boom and rotary cylinder is amazingly easy. One man with a wrench makes the switch to any of five spots on the mounting pad in 15 minutes!

For the complete story, see your John Deere industrial dealer. Send coupon for free literature.



Flush digging with the new 51. Mounted right or left, boom folds crosswise to make compact, balanced transport unit.

The center-mounted John Deere 50 Backhoe has boomswing of 205 degrees, 20-foot 3-inch reach, and digs as deep as 13 feet 6 inches.

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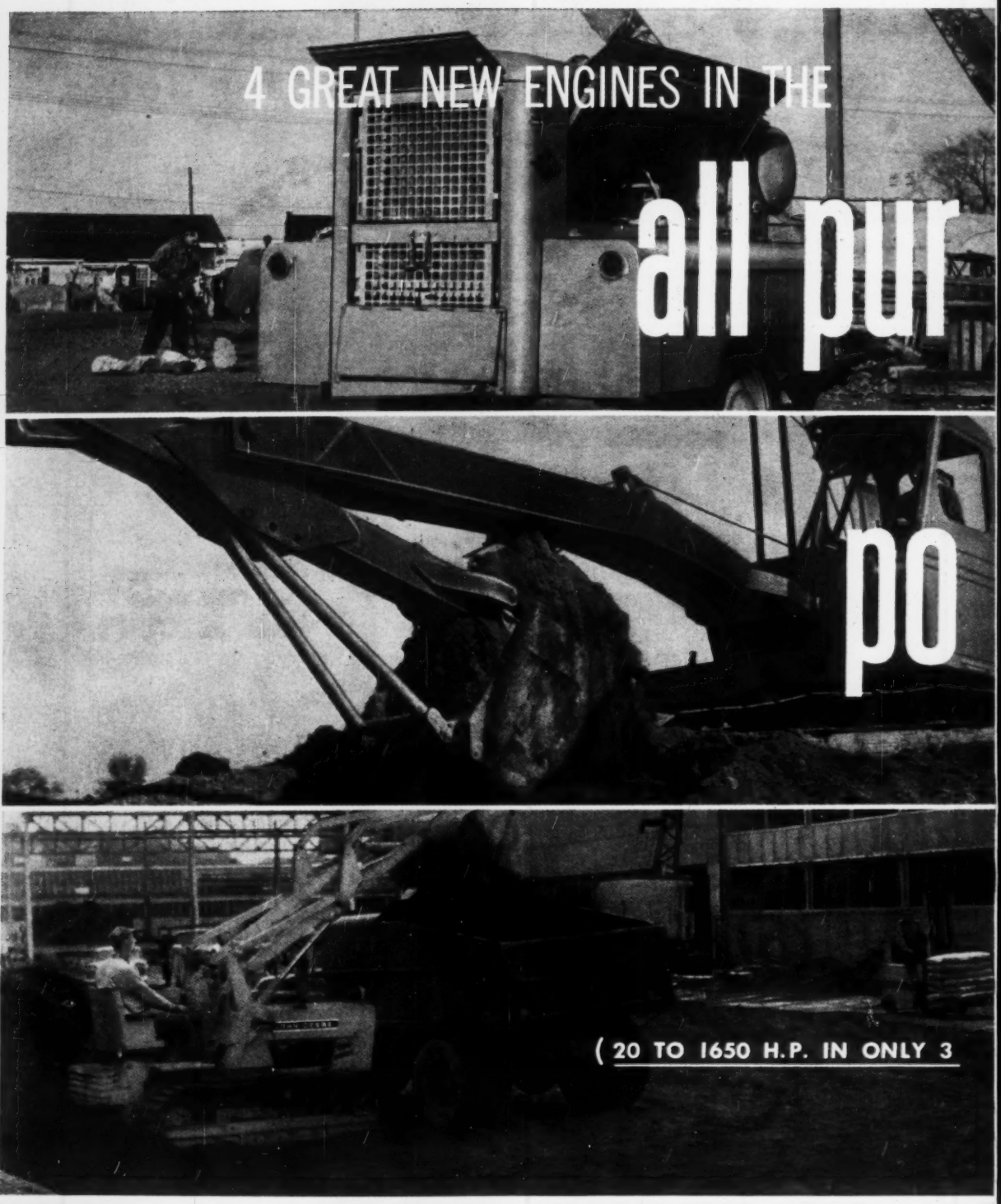

THE GM DIESEL ALL-PURPOSE POWER LINE
20 to 1650 H.P.
in only 3 cylinder sizes

NON TURBOCHARGED RATINGS

NEW
"2-53"
20 to 47 H.P.

"2-71"
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NEW
"3-53"
38 to 97 H.P.

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NEW
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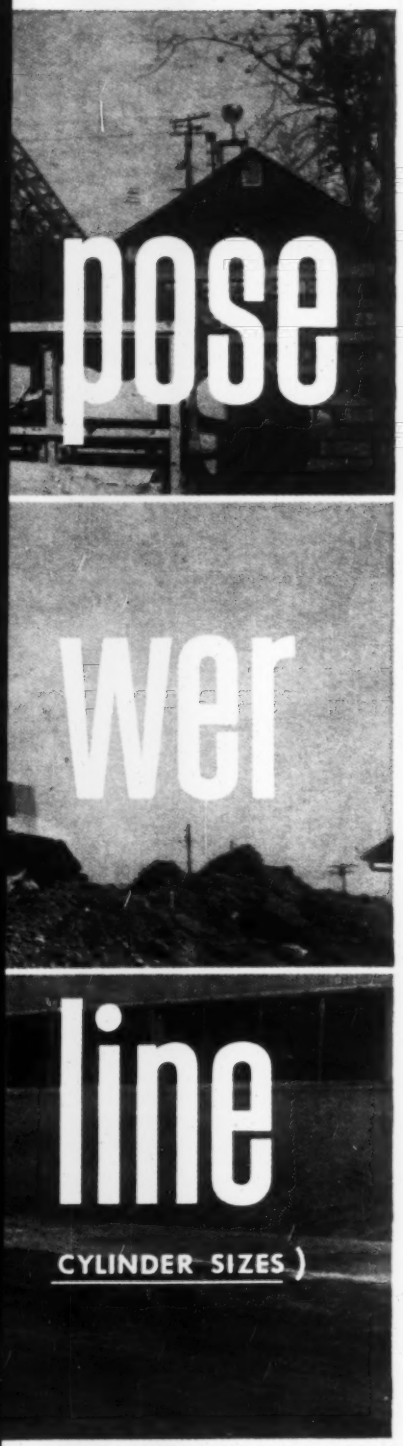

The Series 53 "Jimmy" Diesels

NEW FOR THE CONSTRUCTION INDUSTRY

Smaller and more compact 2-, 3-, 4-, and V-6 cylinder engines based upon the dependable GM Series 71 Diesel

New as tomorrow is the power concept which GM Diesel has embodied in its All-Purpose Power Line to make you more money on every contract.

Using only 3 cylinder sizes, GM Diesel engineers have more than doubled the number of basic engines—vastly increased the power range—yet maintained the famous GM Diesel family relationship and parts interchangeability.

This concept is dramatically illustrated in the Series 53 "Jimmy" Diesel. For *only* in these Diesels are combined *all* the profit-making, cost-saving advantages *any* Diesel has ever had.

Compare them horsepower for horsepower:

> They cost less, weigh less, take up less room. Accelerate faster, last longer, and parts cost less. They're easier and less expensive to repair and maintain—far more efficient, too.

This Series 53 "Jimmy" Diesel is *literally* All-Purpose Power in the 20- to 195-H.P. range. Consider it for your needs. Write GM Diesel, Dept. C-2, Detroit 28, Michigan, and see what these new Series 53 "Jimmy" Diesels can mean to your construction profits.

GM DIESEL

DETROIT DIESEL ENGINE DIVISION,
GENERAL MOTORS, DETROIT 28, MICH.

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Parts and Service Worldwide

NEW
"6V-71"
112 to 252 H.P.

NEW
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150 to 334 H.P.

"6-110"
160 to 335 H.P.

NEW
"12V-71"
224 to 504 H.P.

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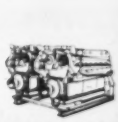
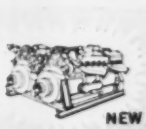
"16V-71"
300 to 675 H.P.



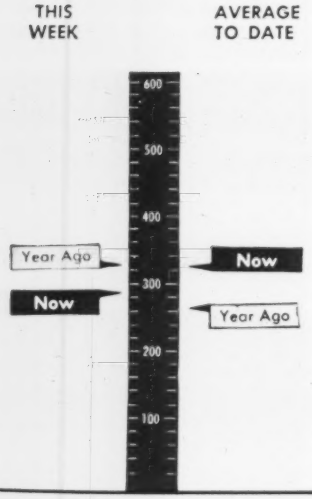
NEW
"24V-71" (Twin 12)
448 to 1008 H.P.

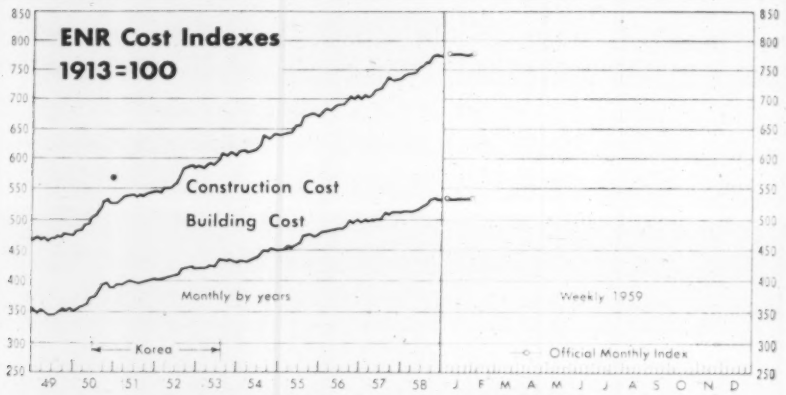


NEW
"32V-71" (Twin 16)
600 to 1350 H.P.
(Turbocharged—1650 H.P.)

Construction Scoreboard

CONTRACTS





CURRENT COST INDEXES

ENR INDEXES (1913=100), 20-cities' average	Week of Jan. 29 1959	% Change from Jan. 1 1959	% Change from Jan. 30 1958
Construction Cost	778.75*	+0.1	+4.7
Building Cost	537.25*	+0.2	+4.2

* Official Monthly Index for February 1959.

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 6 wks 1959	Chge '58-'59
	millions		%
All Heavy Constr.	$284.2	$1,925.3	+22
Private	154.5	840.0	+19
Public	129.7	1,085.3	+24
State & Municipal	107.8	762.8	+6
Federal	21.9	322.5	+108
By Type of Work			
Public			
Waterworks	13.4	47.8	+87
Sewerage	5.6	63.2	−11
Bridges*	8.6	81.2	+96
Highways	59.7	294.6	+23
Earthwork, Waterways	3.9	59.7	−53
Buildings, Excl. Housing	18.9	294.9	+37
Housing	1.7	50.5	−52
Unclassified	17.8	193.3	+268
Private			
Buildings			
Mass Housing	90.7	338.4	+58
Commercial	22.5	212.8	+12
Industrial	37.6	243.3	−6
Unclassified	3.8	45.6	+9

*Includes private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

. . . CAPITAL

New Capital for Construction	Week of Jan. 29 1959	Cum. 5 wks 1959	Chge '58-'59
	millions		%
Corporate Securities	$175.8	$341.3	−11
State and Municipal:			
All Except Housing	74.3	504.3	−7
Housing	...	1.3	+30
Federal Loans	0.7	5.2	−83
Federal Aid	...	....	....
Total Nonfederal	$250.7	$852.1	−12
Federal Appropriations:			
Projects in U. S.	...	....	....
Outside U. S.	...	....	....
Total New Capital	$250.7	$852.1	−12

WAGE RATES, 20-cities' average

	Feb. 1959	% Change from Jan. 1959	% Change from Feb. 1958
Common	$2.504	0	+5.3
Skilled (average 3 trades)	3.792	+0.3	+4.6
Bricklayers	4.047	+0.5	+4.5
Structural Ironworkers	3.807	+0.1	+4.6
Carpenters	3.522	+0.2	+4.8
Equipment operators (average three types)	3.417	+1.1	+4.0

MATERIAL PRICES, 20-cities' average

Structural Steel (average 3 mills), per cwt	5.50	0	+4.3
Lumber, 2x4 Fir, per M fbm	115.15	+0.4	+3.3
Lumber, 2x4 Pine, per M fbm	103.02	+0.3	+3.9
Cement, bulk, per bbl	3.981	−0.1	+0.3
Sand, per ton	2.481	−2.7	−0.6
Ready-mixed concrete, per cu yd	13.946	−0.2	+0.8
Gypsum sheathing, ½"x2'x8', per M-sf*	62.598	−0.4	+0.3
Fiber board sheathing, ½" sq. ed., per M-sf*	71.358	−0.3	+0.8
Mineral wool insulation, 3" batts, per M-sf*	69.788	−0.8	−1.7
Crushed stone, 1½", per ton, CL	2.757	0	−2.9
Concrete blocks, sand gravel, 8"x8"x16", each*	.224	0	−1.8

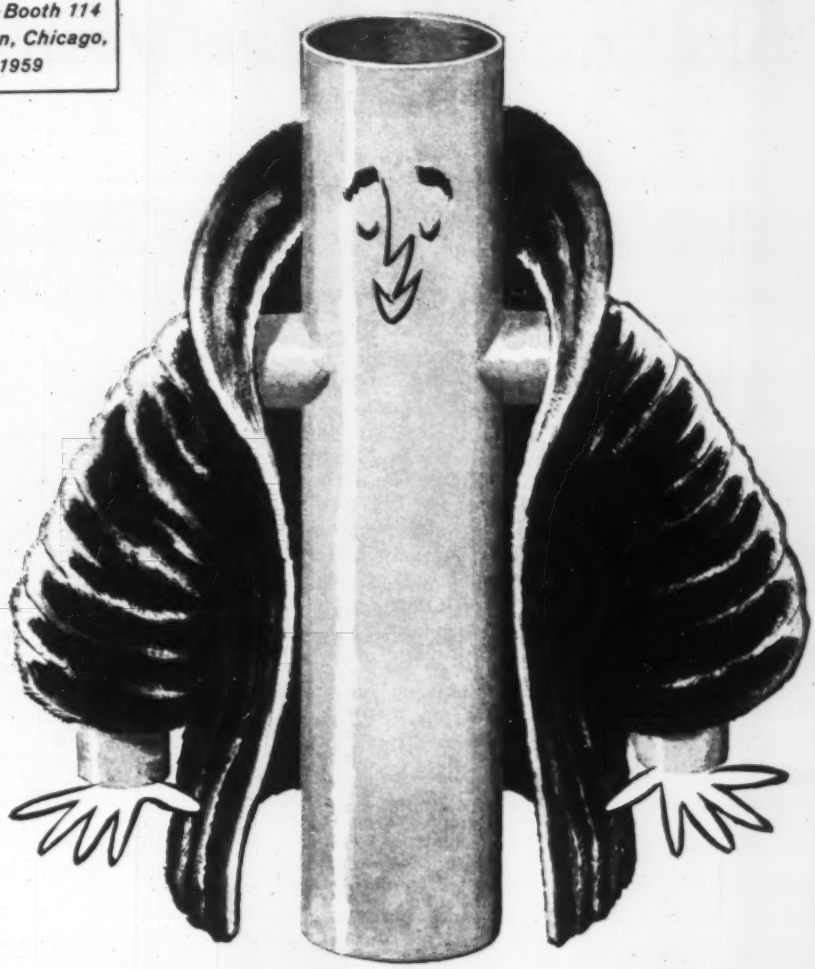
	Jan. 1959	Dec. 1958	Jan. 1958
Brick, common, per M	37.518	0	−1.7
Lime, hydrated finishing, per ton, CL	37.774	+1.3	+2.6
Structural clay tile, 3x12x12", per M, 2,000 up*	181.175	+1.1	−0.8
Vitrified clay sewer pipe, std 12", per ft	1.341	+1.1	+2.9
Concrete sewer pipe, 12", per ft	1.312	+0.2	+5.7

* Delivered, trucklots

ENR INDEX REVIEW

	Construction Cost 1913=100	Construction Cost 1949=100	Building Cost 1913=100	Building Cost 1949=100	Volume 1913=100	Volume 1949=100
1958						
Feb	743.77	155.92	515.78	146.62	446	129
Mar	744.41	156.05	516.09	146.70	520	150
Apr	745.78	156.34	516.61	146.85	585	169
May	751.57	157.56	518.62	147.42	674	195
Jun	757.31	158.76	521.09	148.13	661	191
Jul	762.52	159.85	524.29	149.03	705	204
Aug	764.44	160.25	525.62	149.41	575	166
Sep	773.47	162.15	535.02	152.09	541	156
Oct	775.30	162.53	536.53	152.51	446	129
Nov	774.12	162.28	534.96	152.07	384	111
Dec	773.81	162.22	534.79	152.02	466	135
1958 Average	**759.16**	**159.15**	**524.68**	**149.15**	**531**	**153**
1959						
Jan	778.28	163.15	536.23	152.43	460	133
Feb	778.75	163.25	537.25	152.72	...	...

Visit NACE—Booth 114
Hotel Sherman, Chicago,
March 17–19, 1959



WHY USE MINK COATING?

You can't afford luxuries in these times of tighter operations! You must secure maximum corrosion protection at the best price. Protective Coatings of the Plastics and Coal Chemicals Division offer you high-grade coal-tar materials that have been **proved and improved for decades—at costs that mean lower maintenance expense for you.** Compare the cost and performance of Cold Coatings with other fine protective materials. Apply our Cold Coatings by brush or spray without heating or activators. Properties include chemical resistance, heavy coating thickness per coat, and fast drying.

Use these economical Cold Coatings on pipes, valves and connections; fences, grates and other open metal work; interiors of potable water tanks, cranes, conveyors, and handling equipment; and other areas.

Write for full information.

PLASTICS AND COAL CHEMICALS DIVISION
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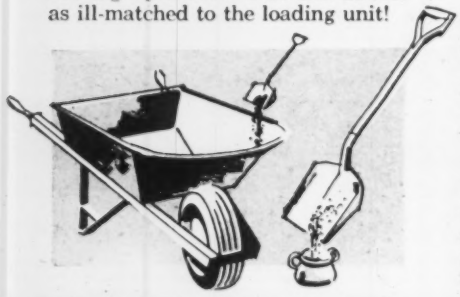
How to select size and number of hauling units for your job

It's not difficult to decide on the right size hauling equipment when you buy a complete fleet at the same time as your loading unit. However, this situation rarely occurs. Most of the time, because of existing equipment, there are 2 problems you face in determining the size of haulers to be purchased:

FIRST — New machines are usually bought to improve an existing hauling fleet — yet they must have travel speeds and capacities that will permit them to work efficiently with older haulers.

SECOND — New machines must fit ability of existing loading unit. You would not use a child's sand shovel to load a wheelbarrow . . . nor would you use a farmer's scoop shovel to fill a sugar bowl. These examples may seem absurd — but every day you can see hauling units on some earth-moving operations that are almost as ill-matched to the loading unit!



If your haul units are too small

Major production losses are caused by use of hauling equipment too small in capacity. Each haul unit should hold at least 4 dippers or buckets of material from your loading unit. If they are too small for this, your loading unit is slowed down while waiting for frequent spotting of haul units.

When haul units are too large

Inefficiency will likewise occur when your haulers are too large (where more than 8 to 10 dipper or bucket loads are needed from loading unit). Over-sized haulers usually make the loading unit reach too far or move up too often in securing and dumping its load. Either condition causes wasted time for your loading rig, and excessive waiting time for the hauling unit next in line.

Factors affecting number and size of haul units to be used

The production ability of each hauling unit . . . and the number required to keep maximum production moving from your loading unit . . . must be determined for each individual job. Factors to consider in regard to number and size of your haul units are:

1. Type of material being loaded.
2. Loading unit's maximum output potential.
3. Haul distance.
4. Conditions of haul — surface and grades.
5. Dump area conditions.
6. Mechanical efficiency of hauling units.
7. Maintenance and service facilities.

Figure 60-minute hour for hauling units

In determining the number of haul units required, instead of figuring on the basis of a 50-minute production hour by your loading unit, estimate on a 60-minute hour. Undoubtedly, cases will arise where 50 minutes per hour will be the maximum output from your loader. If hauling units are determined on that basis, however, there will normally be increased waiting time — since your hauling-unit delays will seldom occur at the same time as those of the loading unit. And remember, it is impossible to haul out more material than the loading unit's maximum production capacity.

Any loading unit requires a time factor for moving into better loading range for easier and faster digging. Also, a factor of time is always necessary for clean-up in front and on the sides of the loader, before it moves. However, usually this can be accomplished during wait periods for haul units. Except on the "perfect" job, there will always be some bunching of hauling units that will cause wait time for your loading unit.

Use of standby hauling equipment

Insuring adequate hauling capacity is one more way of keeping your production rate near the maximum. The use of standby hauling equipment for emergencies is generally recommended. When not in operation, large size standby units represent a cost of not more than $3.00 per hour for ownership cost. Say, for instance, your hauling fleet consists of 4 units, efficiently hauling 300 cu yd per hour. The loss of one would cut your production by 25% — or 75 cu yd for each hour of downtime. In such a case, the cost of a standby unit would be more than offset by the increase in yardage it could provide.

For example, 10% downtime on a 4-unit fleet for a 40-hour week is 16 hours. 16 hours production gained by a spare would be 1200 yards. Figure this gain against your $120 per week for standby cost! You get a plus of 1200 yards production at a cost of only 10¢ a yard . . . in addition to further savings in any plant, or other processing operations slowed down by partial capacity during a hauling shortage. One cent per cubic yard cost of insurance for maximum output should be considered a very reasonable investment.

How to figure load time

Loading units in the range of ⅜ to ¾-cu yd dipper size will normally complete a pass or cycle in 15 to 20

"D" Rear-Dump
11 ton cap., 138 hp, 29.5 mph

"C" Rear-Dump
22 ton cap., 210 hp, 28 mph

"B" Rear-Dump
35 ton cap., 300 or 335 hp, 28.7 mph

seconds. Loaders varying from ¾ to 2 cu yd will normally make a pass in 20 to 25 seconds; those from 2 to 3½ cu yd should produce a bucket or dipper full in 25 to 35 seconds. This pace can be maintained during the loading time. Therefore, the following formula will usually give your approximate loading time:

$$\frac{L \times C}{D \times 60} = LT$$

L = Hauling unit capacity in cu yd based on 3:1

C = Load time per dipper or bucket, in seconds

D = Dipper or bucket capacity in cu yd

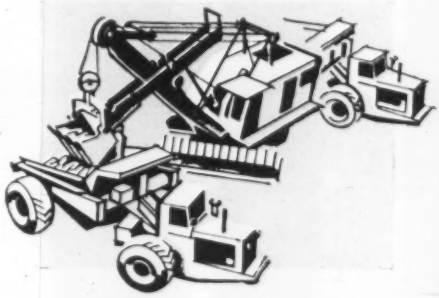
LT = Load time in minutes

Factors that affect production ability of the loading unit are:

1. Type of material.
2. Its condition when being loaded.
3. Height of face for shovels, or distance of reach for draglines.
4. Depth of cut from which material is being taken by loading unit.
5. Distance of swing from loading point to spot where load is dumped into hauling unit.

Proper position of haulers at loading unit

For maximum loading efficiency, there should be a hauling unit under loader at all times. If possible, lay



out your jobs, so that one hauler is being loaded on one side of the loading unit while another is being spotted on the opposite side. Watch to keep loading within a 90° swing.

It is not intended to imply in any way that your hauling fleet should be so large that numerous units are waiting for your loader to fill them. If hauling units are maintaining proper haul-road speeds, and loads are dumped promptly — yet extra units are standing by at the loading unit — then it is probable that unnecessary haulers are being operated. This, of course, assumes that procedure at your loading unit is effective.

To insure success at your job avoid delay in any phase

Overall phases of a hauling operation include:

1. Spotting time.
2. Actual load time.
3. Haul time.
4. Dump time.
5. Return time.

When all avoidable delay in each of these phases has been eliminated, the lowest cost per cubic yard for the material you handle will result.

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R-1800-G-2

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

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Depressed Areas Bill Faces Veto

Douglas measure—a $375-million package—is similar to the bill the President rejected last year

Chances are Congress will pass—and the President will veto—a depressed areas bill very much like the $375-million package introduced last week by Sen. Paul H. Douglas (D., Ill.).

The Douglas bill—a 1959 version of an old legislative story—is substantially the same bill that President Eisenhower refused to sign last fall.

The White House has already sketched, in vague outline, what it regards as an acceptable area redevelopment program for this year. Mr. Eisenhower wants no more than $55 million—most of it in recoverable loans. The loan-grant ratio is not specified.

Senator Douglas says 80 major labor markets in 25 states and 188 smaller labor markets in 35 states have 6% or more of the work force unemployed. This level of unemployment would make them eligible for participation in the Senator's program, which consists mainly of:

- Three $100-million revolving funds: one for urban industrial areas; another for depressed rural areas; the third for 40-year loans to finance purchase or development of land.
- A $75-million lump-sum appropriation, for grants (gifts) for the purchase or development of land.

Loans for urban industrial areas and those for depressed areas would be made, on 30-year terms, to spur industrial development. The money could be used for plant, equipment and machinery, but not for working capital, purchase of raw material or labor payments. The federal loan for any one development project could be no more than 65% of total cost. Private sources and either local or state governments would be required to participate in the capital outlay.

The other $175 million of loans and grants for land purchase or development would be earmarked for such things as construction or expansion of water or sewerage facilities, or development of access to a railroad or navigable waters. The payment of grants would be dependent, of course, on proof that such outlays would improve opportunities in the area for establishment or expansion of commercial or industrial facilities. They would also permit a community to begin from scratch and develop an industrial park.

The future of the bill isn't quite as simple as it looks, however. The Congressional leadership does not give the same high priority to area redevelopment as it does to new omnibus housing and airport assistance legislation. Like area assistance, both of these measures go far beyond Mr. Eisenhower's own recommendations for spending federal money. The Democrats profess confidence in their ability to override, should Mr. Eisenhower veto the airports or housing bills.

Should the Democrats fail such a test, the result would almost certainly be a much smaller area redevelopment bill. However, Congress still might pass the big-scale Douglas bill for political reasons. Passage and veto would make its own position and that of the President unmistakable.

Aside from money sums involved, there are other provisions in the Douglas bill that Mr. Eisenhower will find hard to accept. Outstanding example: The Douglas bill would create a new independent agency—the Area Redevelopment Administration—to administer the program. The President has repeatedly made it plain that he wants no such new bureaucratic entity. Instead, he would give the administrative chores to Commerce Secretary Lewis Strauss.

Democrats make no secret of their feeling that an Eisenhower Cabinet member would not be inclined to administer the program—no matter what its size—with the same enthusiasm and vigor that Democrats want.

Housing Bill's Path Smoothed?

Action last week by the House Veterans Affairs Committee may well prove to be a key to a new housing bill acceptable to President Eisenhower.

The committee voted 21 to 2 to increase the interest rate on home mortgage loans guaranteed by the Veterans Administration.

The same committee-approved measure also would establish a "certified agency" program for the VA. Under it, private lenders approved by the VA would be permitted to make loan commitments and handle other administrative details without checking every step with VA. This would be similar to a program now operated by the Federal Housing Administration.

Another provision would require tract housing developers to place veterans' down payments on VA financed housing in escrow until construction of the house is completed.

According to Rep. Olin Teague (D., Tex.), chairman of the committee, the measure will not be part of the housing bill being prepared by the House Banking Subcommittee on Housing.

The significant point is the interest rate measure. Under it, the VA rate would go from its current 4.75% to 5½%. This would place it on a par with the FHA mortgage. (Effective rate to FHA borrowers is actually 5.75% because of the one-half of 1% insurance premium charge.)

Boosting the VA rate would take the heat off Congress, which is under pressure to pump $500 million or $1 billion into the Federal National Mortgage Association (Fannie Mae) for purchase at par of VA and FHA mortgages. This is being urged by the National Association of Home Builders, and also is included in a housing bill prepared by Rep. Albert Rains (D., Ala.), chairman of the Housing Subcommittee.

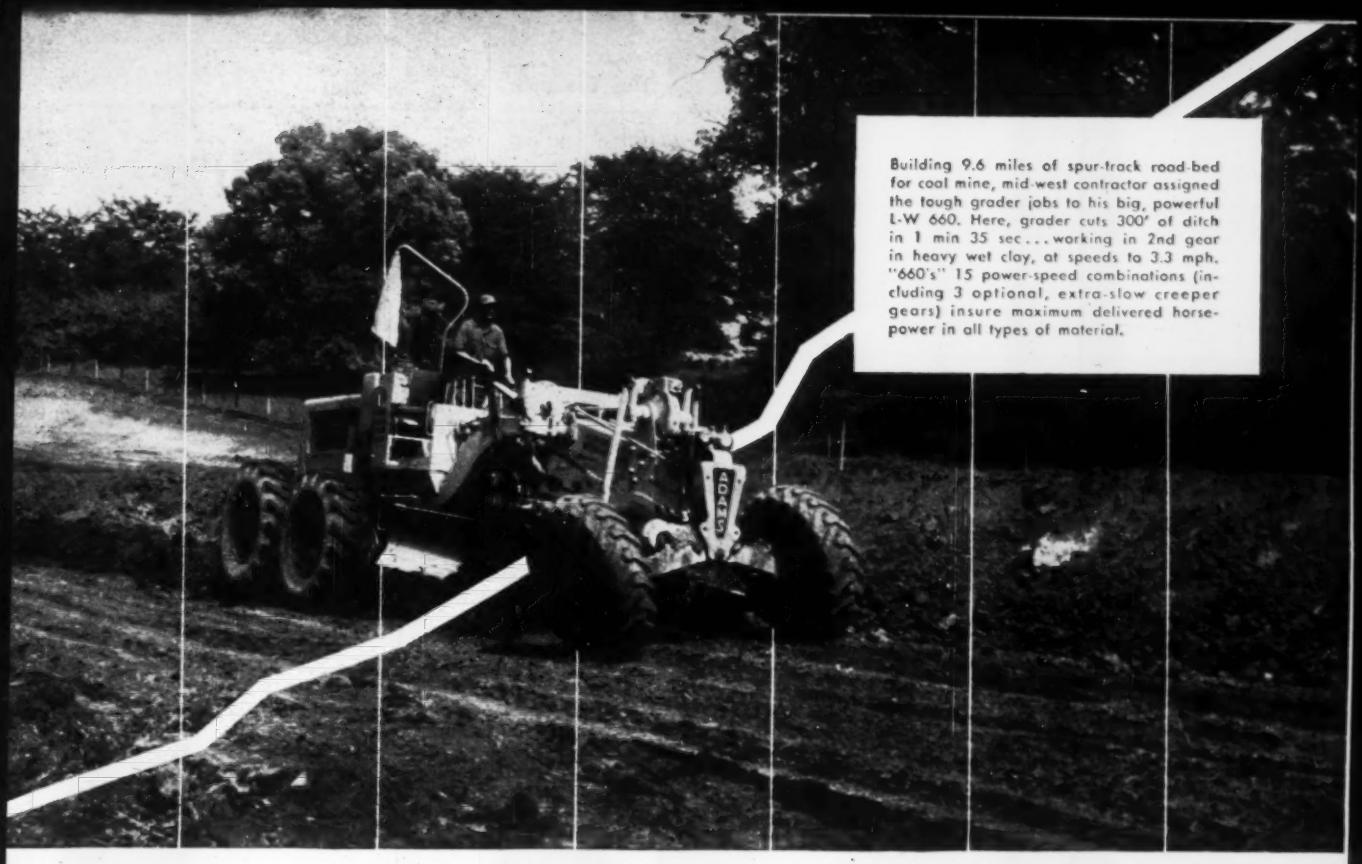
A housing bill drafted by Sen. John Sparkman (D., Ala.), chairman of the Senate's Subcommittee on Housing, does not contain such a provision. He says he wants a housing bill acceptable to the President. Mr. Eisenhower has said he is strongly opposed to any extension of last year's anti-recession measure.

NAHB now may drop its call for renewed Fannie Mae special assistance funds. Its new policy statement says continuation of the "unmarketable VA interest rate forces acceptance of proposals," to purchase mortgages with federal money. And Carl T. Mitnick, the association's new president, says the request is necessary so long as the VA rate is less than FHA's.

The Veterans Affairs Committee move would temporarily accomplish that goal.

Because the committee is recognized as being sensitive to rights and needs of veterans, Congress is not likely to oppose this committee's measure.

(*B&F continued on page 82*)



Building 9.6 miles of spur-track road-bed for coal mine, mid-west contractor assigned the tough grader jobs to his big, powerful L-W 660. Here, grader cuts 300' of ditch in 1 min 35 sec... working in 2nd gear in heavy wet clay, at speeds to 3.3 mph. "660's" 15 power-speed combinations (including 3 optional, extra-slow creeper gears) insure maximum delivered horsepower in all types of material.

Are your graders still producing at a profit?

Within the past few years, you undoubtedly have replaced your old, small-capacity scrapers and haulers with new, faster, bigger models — to meet the demand for stepped-up production and lower costs. But what about your graders? These old "workhorses" may seem to be doing a good job. But are they still able to help you earn adequate profits at today's stepped-up tempo?

We suggest you re-evaluate your grader fleet. Then investigate the high-speed, heavy-duty L-W Adams* model graders. These modern 115 to 190-hp LeTourneau-Westinghouse units will push bigger, heavier loads ...make deeper cuts quicker... finish grade more accurately. They'll help complete your projects faster, more efficiently, for bigger profits.

Plus advantages of modern machines make big difference

Reason for heavy-duty Adams' superior 'round-the-clock performance is its 100% anti-friction drive, rugged one-piece main-frame, and powerful GM or Cummins engines. All 80 to 160-hp models have a 15-speed transmission (including 3 optional creepers). Torque converters on 135 and 190-hp models provide infinite gear ratios for top-work output and highest efficiency. Other L-W advantages common on Adams heavy-duty models — like handy-reach power-controls, rubber engine-mounts, power-steer, excellent visibility — all help your operator to work faster, more accurately.

Let us demonstrate an L-W grader alongside your present unit, or with any competitive grader you want to compare. 5 heavy-duty sizes: 115, 123, 135, 160, and 190 hp. If you are interested in smaller graders, ask about the modern, low-cost LeTourneau-Westinghouse 60 and 80-hp Adams models. *Trademark G-1858 DC-1

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January Contract Awards Climb 30%

Heavy construction contractors received a bigger volume of new business last month than they did in January 1958. Awards climbed 30% over January 1958 to $1.6 billion. Last year, the total was $1.3 billion.

The volume was almost as large as January 1957, but was still 18% short of the record high for a January, set in 1956.

Both private and public work scored substantial gains last month over a year ago. Private contracts rose 30% and private jobs went up 32%. Dollar volume for the month in private work totaled $685.5 million compared to a volume of $521.2 million in January 1958. Public works contracts tallied $955.6 million. In January 1958, the total was $737.6 million.

January awards for the various types of private work held close to the much-improved pace set in December. However, most of the gain was in commercial building, which includes office buildings, stores, garages and shopping centers.

Commercial building contracts rose 48% over a year ago to $190.3 million. Mass housing contracts climbed 36% to $247.6 million, compared to awards of $181.7 million in January of last year.

The important industrial building sector also scored a substantial gain over a year ago. Contracts rose 19% to $205.7 million, compared with the year-ago figure of $172.6 million. The January figure was also an improvement over December 1958, when industrial building contracts totaled $125.8 million.

• **State and federal gains**—In the public works category, federal contracts gained 138% over January of last year. State and municipal work went up 7%.

Federal contracts amounted to $300.6 million compared with $126.3 million one year ago. It was the largest total since July. State and local contracts totaled $655 million. The January 1958 total was $611.3 million.

The largest single gain within the public works sector was "unclassified," which includes airfields and missile bases. Awards in this category tallied $175.5 million compared with only $45.4 million one year ago. Two big jobs were largely responsible for the gain: a $50-million intercontinental ballistic missile installation at Lowry Air Force Base, Denver; and a $12.5-million runway job at the new international airport at Chantilly, Va.

The next largest public works gain was scored in the bridge group. Here contracts climbed 165% over January 1958 to $72.6 million. Last year contracts amounted to $27.5 million.

Other gains were scored by water works, up 50%; highways, up 19%, and buildings other than housing, up 56%.

Only three types of work declined: public housing, down 44%; earthwork waterways, down 53%; and sewerage, down 3%.

All regions gained last month. The Far West gained most—83%.

ENR Cost Indexes Higher for February

Lumber and cement price increases, plus scattered wage boosts for some skilled labor, push ENR's 20-Cities Indexes up slightly this month.

Construction Cost Index is 778.75, based on 1913 = 100. This is a record, although the value is only 0.1% above January. It is 4.7% above the February 1958 reading.

The ENR Building Cost Index is up 0.2% to 537.25, also based on 1913 = 100. This also is a new record, and is 4.2% above February 1958.

Douglas fir 2 x 4 lumber prices are up in five cities. Prices are higher by $1 per Mfbm in New York and San Francisco, $2 in St. Louis and Seattle, and $4 in Chicago. These advances are sufficient to offset a price drop of $2 per Mfbm in Boston.

Southern pine prices are up in two cities: $4 per Mfbm in Chicago and $2 in St. Louis. These too are high enough to offset a $2 cut in Boston.

Cement prices are up 23 cents per bbl for bulk cement in Baltimore. Partly offsetting this rise are reductions of 11 cents and 3 cents per bbl, respectively, in Boston and St. Louis. Freight rate reductions account for the drop in these two cities.

More freight rate slashes on cement are scheduled by eastern railroads April 1. This will drop f.o.b. prices in eastern cities. In Baltimore, for example, the price of bulk cement will drop by 12 cents per bbl; cement prices in bags by 11 cents and mortar cement by 8 cents.

Reason for cuts: Railroads are fighting to regain volume lost to truckers.

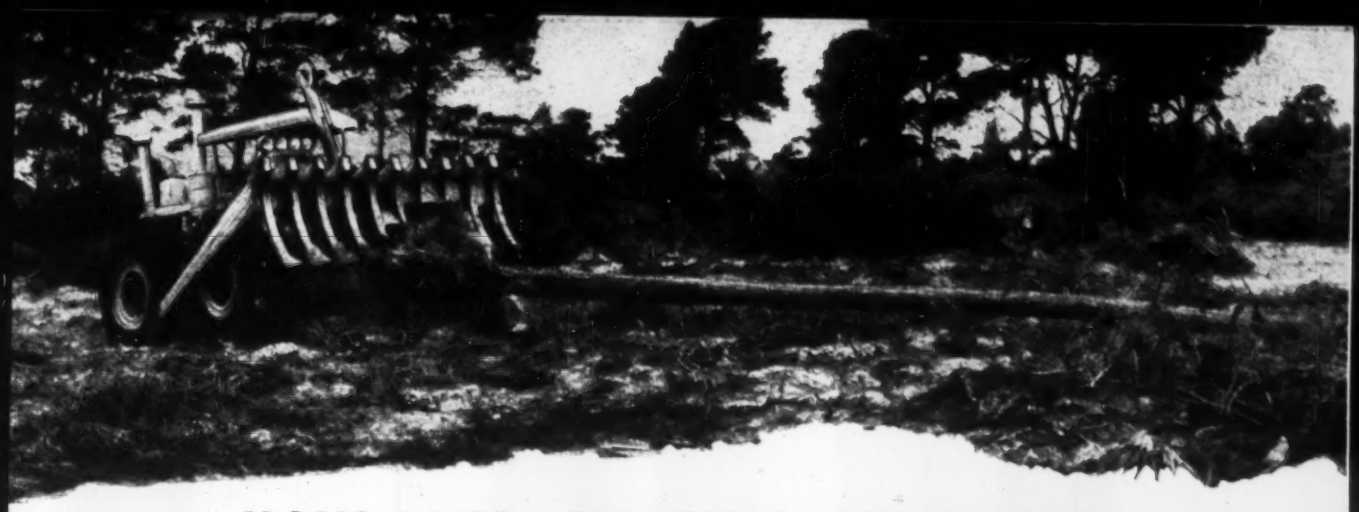
Engineering Construction Contracts for January

Five Weeks—Thousands of Dollars (000 Omitted)

	January, 1959						Total U. S.		%	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	January, 1959	January, 1958	Change '58 to '59	January 1959
Public Works, Total	**36,374**	**144,748**	**189,260**	**159,356**	**235,613**	**190,221**	**955,572**	**737,612**	**+30**	**67,241**
Waterworks	175	9,621	3,434	2,677	6,040	12,502	34,449	23,045	+50	6,079
Sewerage	1,814	15,435	8,715	15,600	6,818	9,083	57,465	59,405	− 3	2,981
Bridges	2,574	14,737	8,837	18,304	17,883	10,280	72,615	27,464	+165	4,469
Earthwork, waterways	1,069	9,732	3,546	725	17,590	23,163	55,825	119,960	−53	6,659
Streets and roads	13,031	30,993	42,065	40,400	77,058	31,250	234,797	198,132	+19	10,246
Buildings: Residential	2,546	7,461	15,743	5,435	9,471	81,75	48,831	87,795	−44	7,134
Other	9,337	41,434	73,098	65,412	35,573	51,192	276,046	176,366	+56	15,670
Unclassified	5,828	15,335	33,822	10,803	65,180	44,576	175,544	45,445	+286	14,003
State and Municipal	29,832	128,696	107,003	120,545	140,789	128,092	654,957	611,278	+ 7	44,955
Federal	6,542	16,052	82,257	38,811	94,824	62,129	300,615	126,334	+138	22,286
Private, Total	**52,582**	**235,819**	**92,901**	**90,869**	**158,081**	**55,277**	**685,529**	**521,201**	**+32**	**73,509**
Bridges										
Buildings: Industrial	18,220	64,284	43,574	12,626	51,668	15,328	205,700	172,639	+19	18,195
Mass housing	20,599	77,433	34,531	58,905	35,350	20,846	247,664	181,693	+36	20,047
Commercial	10,171	92,929	11,541	17,602	40,364	17,731	190,338	128,541	+48	24,823
Unclassified	3,592	1,173	3,255	1,736	30,699	1,372	41,827	38,328	+ 9	10,444
Total Jan. 1959—5 weeks	**88,956**	**380,567**	**282,161**	**250,225**	**393,694**	**245,498**	**1,641,101***		**+30**	**140,750**
Dec. 1958—4 weeks	91,206	337,730	244,179	239,123	280,358	159,244	1,351,840			1,557,191
Jan. 1958—5 weeks	68,259	372,560	224,906	212,792	245,793	134,503		1,258,813		110,072
% Change '58 to '59	+30	+2	+25	+18	+60	+83				+28

* Add Alaska: Jan. '59 $2,855

ENGINEERING NEWS-RECORD *reports continental U. S. construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $53,000; *other public works,* $88,000; *industrial buildings,* $110,000; *other buildings,* $400,000.



HOW LAND-CLEARING SPECIALIST completes job faster...at low cost

John Kerestly of Boynton Beach, Florida, specializes in land clearing. Working in the rapidly-expanding area around Palm Beach, his firm keeps busy with municipal work as well as contracts for private land development.

To handle these jobs — most of them widely scattered within a 50-mi radius of home base — contractor uses 2 LeTourneau-Westinghouse 210-hp Tournatractors® and an L-W 4-wheel drawn-scraper. A major advantage for use on this type of work is that these 17.2-mph rubber-tired tractors are driven to projects under their own power... saving the expense of truck-trailer haul.

Here's how one of these speedy L-W tractors — equipped with a modified L-W root rake — cleared a typical 22-acre area of palmetto, scrub oak, pines, and stumps for Lake Osborne Hills Housing Development, Lake Worth, Florida.

Clears 4 acres in 8 hr

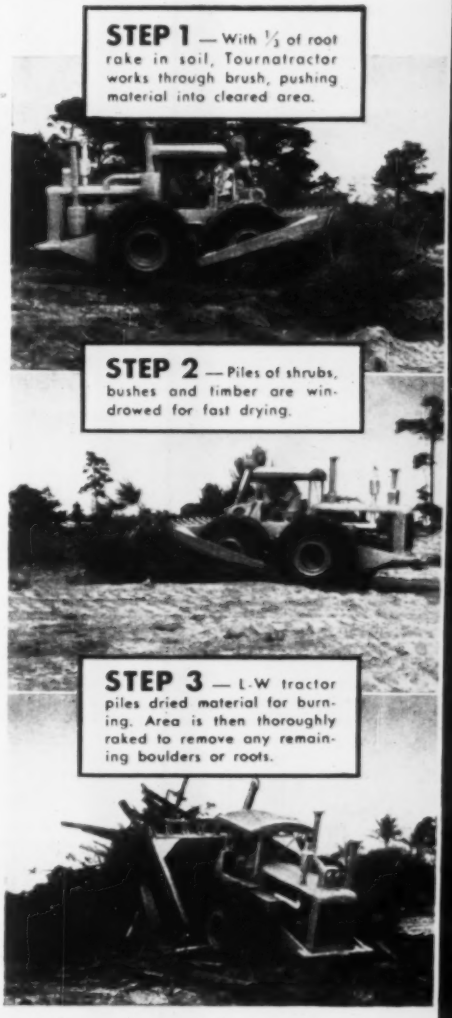
Tournatractor operator clears area in sections, a few acres at a time. With root rake lowered to about ⅓ in sandy soil, he enters brush — working in 2nd or 3rd gear (3.3 to 7.5 mph) — and comes out into cleared section with rake full of material (step one). When section is cleared, brush and timber is windrowed for fast drying (step two). After it is dry, tractor rakes material into piles for burning (step three). To finish the job, L-W tractor thoroughly rakes the cleared area, removing any remaining boulders or roots. With this method and one 17-mph Tournatractor, Kerestly clears an average of 4 acres per 8-hr shift.

"Fast ... dependable ... efficient"
A veteran of 7 years' experience in land clearing, owner John Kerestly says, "You can't beat Tournatractor for clearing, dozing, and stumping. It's fast, dependable, efficient... will out-run, out-maneuver any track-type tractor made. And we've had little maintenance on our Tournatractors." Operator Robert Smith says, "I don't believe you can find a better tractor for clearing... it'll take out two stumps for every one a track-type tractor takes out."

Try it on your job

Let us show you how this LeTourneau-Westinghouse rubber-tired tractor can help *you* earn bigger profits. Besides root rake, 10 other multi-purpose L-W tractor attachments are available — including bulldozer or Angledozer® blade, winch, push-plate, and electric-control 18-yd drawn-scraper. Write for full details.

CT-1974-DCJ-1


STEP 1 — With ⅓ of root rake in soil, Tournatractor works through brush, pushing material into cleared area.
STEP 2 — Piles of shrubs, bushes and timber are windrowed for fast drying.
STEP 3 — L-W tractor piles dried material for burning. Area is then thoroughly raked to remove any remaining boulders or roots.

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

Armco Products at Work on New Interstate

Interstate Ohio 75 is the name of the sparkling new freeway version of tired, twisted old Route 25. In various stages of design, construction and use, the 213-mile limited access superway will link Cincinnati and Toledo when completed. As the pictures on these pages show, the designers and builders of this big road are relying time after time on products that have been proved in service . . . the family of Armco Drainage and Construction Products.

Armco FLEX-BEAM® Guardrail provides strong, easy-to-see, easy-to-maintain protection at key spots on completed sections. Armco Corrugated Metal Drainage Structures will serve under the heavy dead load of high fills, and the vibration and impact of just a few feet of cover. For abutment foundations on the many grade separation structures, thousands of feet of Armco Pipe Piling are being driven. And to solve a typical earth control problem, Armco Bin-Type Retaining Wall has been installed.

For complete data about these and other Armco Construction Products, just fill in and mail the coupon. Or, write us, outlining your project. Armco Drainage & Metal Products, Inc., 4569 Curtis Street, Middletown, Ohio. In Canada: write Guelph, Ontario.

LEFT: Where Interstate 75 crosses a state road north of Cincinnati, Armco Pipe Piling is driven for foundation of grade separation structure. State road will pass under the freeway.

RIGHT: Armco Bin-Type Retaining Wall holds earth in front of bridge abutment on section of Interstate 75 south of Lima, Ohio.

Send data on the Armco Products checked:

- ☐ Bin-Type Retaining Wall
- ☐ Water Control Gates
- ☐ Corrugated Metal Drainage Structures
- ☐ Guardrail
- ☐ Sheeting
- ☐ Pipe Piling & Pile Shell
- ☐ Tunnel Liner
- ☐ Steel Buildings

NAME _____

TITLE _____

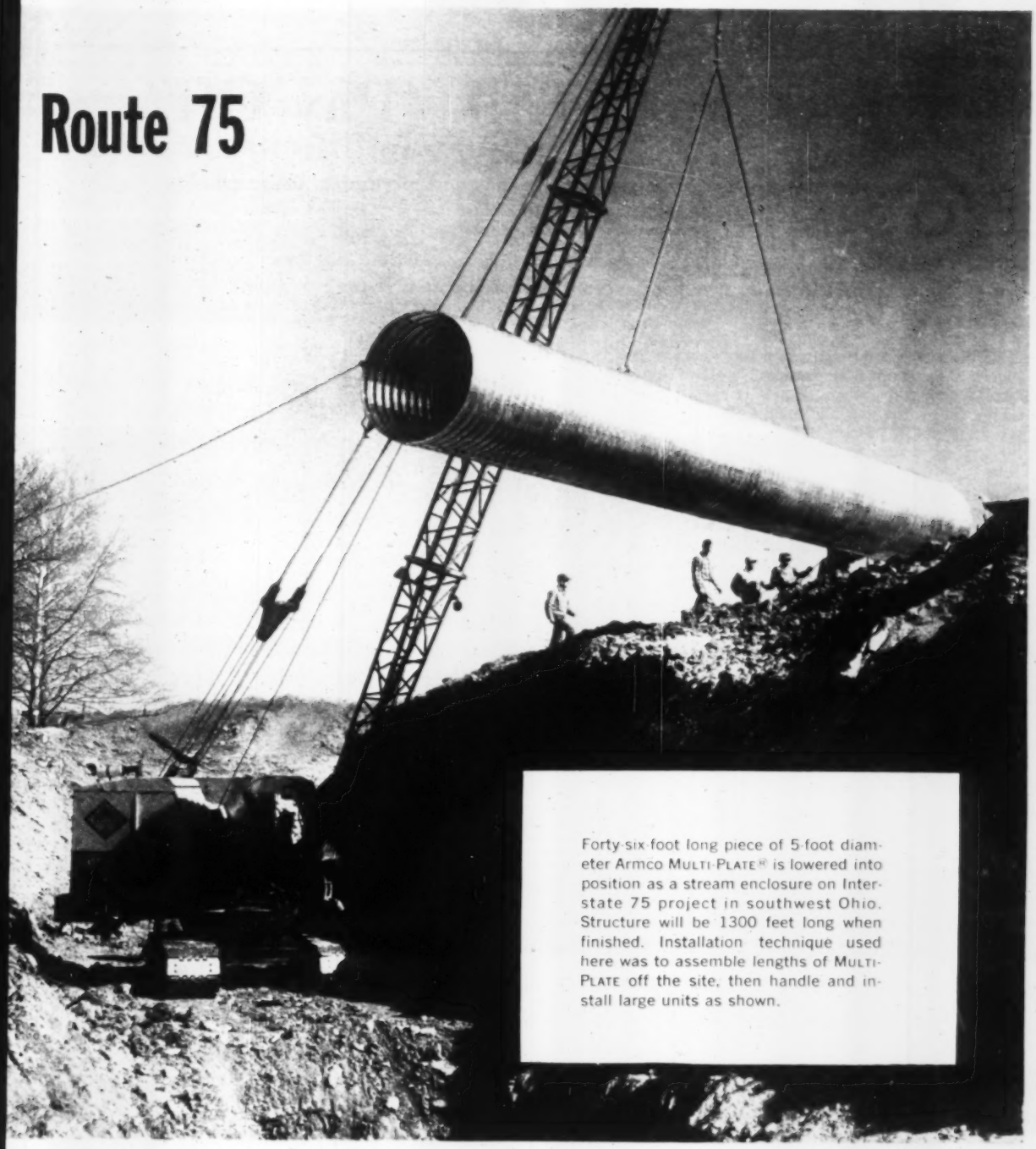
FIRM _____

STREET _____

CITY & ZONE _____

STATE _____

Route 75



Forty-six-foot long piece of 5-foot diameter Armco MULTI-PLATE® is lowered into position as a stream enclosure on Interstate 75 project in southwest Ohio. Structure will be 1300 feet long when finished. Installation technique used here was to assemble lengths of MULTI-PLATE off the site, then handle and install large units as shown.

ARMCO DRAINAGE & METAL PRODUCTS

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products

Will Top Level Talks Pay Off?

- **Labor and management last week took the most promising labor relations step in the history of the construction industry.**
- **Top men on both sides got together to talk about their common problems; they formed a study group to explore the problems and seek solutions.**

The interests of the construction consumer got top billing at an unprecedented meeting in Miami Beach last week between the leading contractor associations and the chiefs of the AFL-CIO building trades unions.

Upshot of the meeting was a decision to appoint a joint committee to see what can be done to improve the value of the construction dollar and to promote job opportunities for union contractors and construction workers.

The joint meeting took place at the ocean-front Singapore Motel where the Executive Council of the AFL-CIO Building and Construction Trades Department was holding its quarterly meeting—an occasion that looked more often than not like an industry rather than a union one.

The action reflects the serious concern of both labor and management over rising construction costs. It is essentially an experimental teamwork effort that may lead to the formation of a joint industry board that would be the first of its kind in the nation.

It was one of two simultaneous labor-management developments of prime significance and was jointly announced by the Associated General Contractors' executive director, James Marshall, and Vincent Morreale, of the laborers union.

"The big news," they said, "is that we are working together."

The other development was reaffirmation of the "Ten Commandments" by the general presidents of the unions.

Building trades' President Richard Gray and John O'Connell, chairman of the Labor Cost Committee of National Constructors Association, jointly announced that the international building trades unions would continue to push the work practices code in an effort to give the "maximum value at a minimum of construction cost."

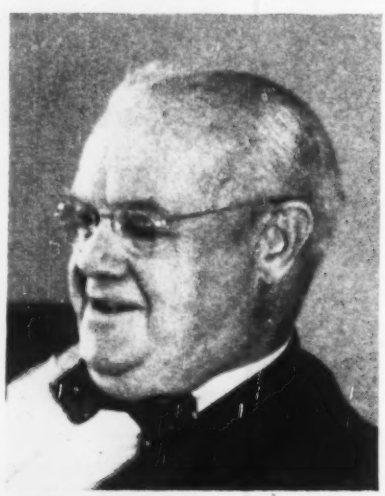
• **The cost problem**—In the hotels up and down the beach, from the Kenilworth to the Singapore, the problem of rising construction costs absorbed the attention of labor and management.

Current fear among unions is still substantially the same as expressed by Mr. Gray in his wage freeze proposal of last year: High and unnecessary labor costs play into the hands of the industrial unions in the contest for industrial construction work, give a competitive advantage to nonunion workers and members of the United Construction Workers; they also invite unemployment and stimulate use of new techniques and materials that could make some trades a thing of the past.

Groups like NCA and AGC feel they are caught in the middle with work postponed or lost to nonunion contractors or to the owners themselves, who fall back on force account work when it becomes more economical.

• **NCA effort**—This concern brought the NCA labor cost committee to Miami Beach in full force and led to what Mr. Gray and Mr. O'Connell called "an outstanding example of cooperation between labor and management."

NCA is an influential and dynamic association of unionized engineer builders whose membership does about 90% of all the heavy construction work on atomic energy, steel, oil, power and chemical installations. It is interested in quality and efficiency.



Richard Gray: Remains at the helm.

It was instrumental in promoting labor's adoption of the "Ten Commandments" last year. Current evaluations of the program's progress indicates that local acceptance of the code has been good in some areas, poor in others. The NCA mission last week was to revitalize the program in an effort to stabilize construction costs.

The general presidents of the international unions reaffirmed their support of the program and pledged their assistance in trying to make the code more effective at the local level. While no one, it was pointed out, expects to accomplish a miracle overnight, a continuing effort must be made to reduce unnecessary labor costs for the good of all.

• **AGC effort**—The AGC, whose top brass was also at Miami Beach, wrestled with the cost problem on another front. And that is what led to the meeting that ended in an agreement to set up a joint labor-management study committee.

Although the AGC has spearheaded the present effort, Mr. Marshall made it clear that the joint effort is not dominated by the AGC and expressed the hope that all contractor associations will participate on an equal footing.

Mr. Marshall and Mr. Morreale say the ultimate framework of the program has not been visualized. Eventual formation of a permanent and effective joint board or committee, however, seems to be a hoped-for objective.

Mr. Marshall indicated that the "common problems" under the committee's scope would be those that enter into the cost and job opportunity picture. He said these have not yet been defined, but he specifically ruled out labor legislation as a probable item of study.

It was apparent from action taken earlier that labor legislation was not a fruitful area for joint study (p. 87).

Jurisdictional Strikes . . .

Less Frequent and Shorter

The National Joint Board for the Settlement of Jurisdictional Disputes has closed its books on another year of substantial progress and achievement.

Its records indicate that the number of strikes over work assignments in 1958 was nearly a third less than in 1957.

The average duration of strikes was shorter, too. Successful efforts to settle disputes at the local level were more apparent. Compliance with board directives was better. And prompt handling of disputes by the board forestalled the accumulation of any backlog of cases.

All this occurred during a year of record construction volume, when use of new materials and new applications of old materials were conspiring to increase jurisdictional conflicts within the building trades.

These are the highlights that emerged from the board's Annual Report for 1958. The report was approved by the board last week in Miami Beach, where the Executive Council of the AFL-CIO Building and Construction Trades Department was holding its quarterly meeting.

For the construction industry, it indicates that the voluntary settlement of jurisdictional disputes is paving the dividends contemplated by those who made it possible when the Taft-Hartley Act was framed.

Looking back over the last three years, the board finds that 441 work stoppages occurred last year in jurisdictional disputes referred to the board. This compares with 731 in 1957 and 806 in 1956.

The average duration of the strikes dropped to about two days. At the same time, picket line action also decreased, dropping from 157 instances in 1957 to 92 in 1958. And the number of disputes ending in job decisions rendered by the board fell from 527 in 1957 to 410 in 1958.

The board has no intention, however, of resting on its laurels.

It suggests several areas for further improvement:

- Further reduction of stoppages.
- Achievement of more settlements under the auspices of international and local union officials working within the ground rules of the board.
- Conclusion of more international agreements under which unions resolve specific conflicts or clarify existing agreements.

The board is a private agency established in 1948 by construction industry leaders from management and labor. Impartial chairman and administrative head of the board is former Pittsburgh contractor Richard J. Mitchell, who has been serving on a full-time basis since January 1958.

Ike's Labor Bill Faces Fight

When the White House labor package was opened in Congress last week, the expected controversies popped out.

The Eisenhower bill contains several reform measures opposed by the AFL-CIO and some basic changes in the Taft-Hartley Act—always good for a legislative battle (ENR Jan. 29, p. 80).

Three of the Administration proposals that may doom the chances of any kind of labor legislation are a ban on blackmail picketing, broad extension of the present ban on secondary boycotts, and certification without election for building trades unions instead of legalization of pre-hire labor contracts.

The White House has wrapped all this up with reform in a single package to avoid "piecemail" legislation. Sen. John Kennedy (D. Mass.) is trying on the other hand, to get reform legislation and basic Taft-Hartley changes considered separately.

Result is to pit labor, management and the public against each other on one big battlefield with labor reform shaping up as the biggest loser in the final showdown.

Meanwhile, at its meeting in Miami Beach last week, the Executive Council of the AFL-CIO's Building and Construction Trades Department backed the Kennedy labor bill, which proposes no reforms on blackmail picketing and secondary boycotts. With it, they hope to achieve legalization of pre-hire labor contracts and of employer contributions to apprentice training and vacation funds.

In separate Taft-Hartley legislation, the department seeks legalization of on-site secondary boycotts, repeal of Section 14(b) (that permits states to pass right-to-work laws) and elimination of mandatory injunctions on boycott charges.

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Not just a grid, but a new Grid System

Based on units of 27 Square Feet, rather than linear measure, EXCAV-AIDE gives cut and fill and other excavation quantities *directly* in Cubic Yards. Guaranteed to speed up your estimating or your money back.

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with less cost

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30 to 300 psi
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3" 4" 6" Models

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OFFICIAL PROPOSALS

Bids: February 19, 1959.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., eastern standard time on the 19th day of February 1959, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 333 Broadway, Albany 1, New York						
Schenectady	FASS 59-1	Princetown Church Road, Pt. 2 and Dare Road, Pt. 1 Proj. S-833(2)	3.86	Bit. Double Surf. Treat. = 3.84 Mi. Misc. Work = 0.02 Mi.	$22,000 Plans $5	$400,000
Warren (Rte. 9L)	RC 59-7	Glens Falls-East Lake George, Pt. 1, SH 1666 Glens Falls-East Lake George, Pt. 2, SH 1813		Roadside Development	$800 Plans $5	14,000
Washington (Rte. 22)	FARC 59-6	White Creek-County Line, SH 721, Shunpike, SH 97 Proj. F-570(7)	4.53	Asphalt Concrete, Widen Exist. 21' Conc. Slab Bridge; Widen Exist. 3 Sp.-81' Bridge with Pre-Cast Beams	$45,000 Plans $5	781,000
DISTRICT No. 2, LACY KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Herkimer	FASS 59-3	Stone Road, Co. Rd. 141 Proj. S-535(1)	2.72	Bit. Double Surf. Treat. Pavt.	$19,000 Plans $5	343,000
Madison	FASS 59-4P	Stockbridge Falls-Merrillsville, Pt. 1 and Pt. 2 (Co. Rd.) Proj. S-360(3)	7.61	Bit. Double Surf. Treat. Pavt.	$13,000 Plans $5	240,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	FAC 59-1	Rochester City, Inner Loop (Water St. to Seio St.) Proj. U-1089(10)	1.06	Drainage Tunnel in Rock	$82,000 Plans $5	1,487,000
Orleans	FASS 59-2	West Lee Street Road, Co. Rd. 94; East Lee Street Road, Co. Rd. 30A and 30 Proj. S-242(3)	3.77	Double Surf. Treat. Bit. Mac = 3.69 Mi. Misc. Work = 0.08 Mi.	$13,000 Plans $5	232,000
DISTRICT No. 6, JAMES H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Chemung	FASS 59-5	Big Flats-South Corning Co. Rd. 10 Proj. S-525(1)	0.42	Bit. Double Surf. Treat. Pavt. = 0.31 Mi. Asphalt Conc. Ty 2B = 0.11 Mi. Comp. Weld. Plate Girder Br. 3 Sp. 117.5' Each.	$28,000 Plans $5	514,000
Steuben (Rte. 15)	FARC 59-9	Bath-Avoca, SH 5204; Bath Village, SH 5350 Proj. U-225(13)	1.60	Asphalt Concrete Pavement	$57,000 Plans $5	1,035,000
DISTRICT No. 8, KURT G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Orange (Rte. 17)	FARC 59-8	Tuxedo-Harriman Pt. 1, SH 8258 Proj. F-405(9)	2.85	Asphalt Concrete Pavement	$18,000 Plans $5	335,000
Orange and Sullivan (Rte. 17)	FATS 59-1	SH 53-15; SH 54-9; SH 53-7, SH 1329; SH 41-3; SH 67-11, SH 5210 and SH 5510 Proj. F-1050(9), F-495(13)	27.98	Furnishing and Erecting Traffic Signs and Delineators	$11,000 Plans $5	204,000
DISTRICT No. 9, JOSEPH C. FREDRICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 17)	RC 59-5	Windsor-Deposit, SH 5338 (Br. No. 2)		Cleaning and Painting Thru Truss Bridge	$1,000 Plans $5	19,000
DISTRICT No. 10, M. E. GOLT, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Queens (Int. Tour. Rte. 495)	FICE 59-1	Interstate Route Connection No. 513, Clearview Expressway, (58th Ave. to 35th Ave.) Cont. No. 2 Proj. I-1112(10)	1.52 (4.90 Ave.)	9" Cem. Conc. Pavt. 2 @ 36' Wide = 1.32 Mi. Misc. Work = 0.20 Mi. (Ave. = 3.91 Mi. Asp. Conc. and 0.99 Mi. Cem. Conc. Pavt.) 4 Hy. Seps. Comp. Wf Beams 2 Sp.-113.6', 2 Sp.-114.1', 2 Sp.-115.8' and 4 Sp.-196', 1 RR Sep. Weld Wf Thru Girder 4 Sp.-210.2', 2 Ped. Overpass Wf Beams 5 Sp.-331.2 and 4 Sp.-217.4'	$600,000 Plans $10	10,780,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

Bids: February 24, 1959

Power Authority of the State of New York

For the Furnishing and Delivery of Draft Tube Gates for Tuscarora Power Plant
Specifications No. PA-N-23023
Niagara Contract No. NP37

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. destination, Niagara Falls, Niagara County, New York, of the draft tube gates for the Tuscarora Power Plant until 10:30 A.M., Eastern Standard Time on the 24th day of February, 1959, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

The work consists of fabricating, furnishing and delivery thereof of approximately 528 tons of structural steel draft tube gates for the Tuscarora Power Plant.

Delivery of the above items will be required beginning April 1, 1960.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, at the Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Ten Dollars ($10.00) per initial set of contract documents, and Five Dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, and in the office of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee (certified check or bid bond) will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

Bids: February 17, 1959

Contract BP-502.260

THE PORT OF NEW YORK AUTHORITY
BROOKLYN-PORT AUTHORITY PIERS
BORINGS

Sealed proposals for making borings and taking samples between existing Piers Nos. 22 and 24 at the Brooklyn-Port Authority Piers will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M., on Tuesday, February 17, 1959, at which time said proposals will be opened and read in Room 1108.

Contract Documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 5, 1959

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-5146) SET ASIDE FOR SMALL BUSINESS will be received at Denver, Colorado, until 2 p.m., Mountain Standard Time, March 3, 1959, for furnishing the following high-pressure gate valves with hydraulic hoists and accessory equipment: One (1) 3-foot 6-inch by 3-foot 6-inch; ten (10) 2-foot 9-inch by 2-foot 9-inch; and one (1) 2-foot 3-inch by 2-foot 3-inch, for Paonia Dam, Paonia Project, Colorado; Foss Dam, Washita Basin Project, Oklahoma; and Emigrant Dam Enlargement, Rogue River Basin Project, Oregon. Delivery is desired within 240 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 25, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: March 3, 1959

Contract NYA-970.004

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
HANGAR NO. 17
PAVING AND UTILITIES

Sealed proposals for the construction of paving and the furnishing and installation of utilities for Hangar No. 17 at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, March 3, 1959, at which time said proposals will be opened and read in Room 1105.

Contract documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $20.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $20.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued.

The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 5, 1959

Bids: February 12, 26, 1959.

Baldwin Municipal Authority Allegheny County, Pennsylvania Sewage Collection Project

Sealed Proposals will be received at the office of the Municipal Authority of the Borough of Baldwin, Allegheny County, Pennsylvania, in the Baldwin Borough Municipal Building, 3344 Churchview Avenue, Pittsburgh 27, Pennsylvania, until 8:00 P.M. Eastern Standard Time on two (2) dates, February 12, 1959 for the construction of a portion of a Sewage Collection System as follows:

Contract I
Parts A and B
16,300 Lin. Ft. 8" to 10" Sewers

Contract II
Part C
14,300 Lin. Ft. 8" to 10" Sewers

Contract III
Parts D and E
11,000 Lin. Ft. 8" to 10" Sewers

and on February 26, 1959 for the construction of the remaining portion of the Sewage Collection System and a Glass Run Interceptor Sewer as follows:

Contract IV
Parts F and G
15,600 Lin. Ft. 8" to 10" Sewers

Contract V
Parts H, I, J, and K
21,500 Lin. Ft. 8" to 10" Sewers

Contract VI (Glass Run Interceptor Sewer)
Part L
8,500 Lin. Ft. 8" to 21" Sewers

all in accordance with Contract Plans and Contract Documents which are on file at the Offices of Lorenzi, Dodds and Gunnill, Consulting Engineers, 1106 Berger Building, Pittsburgh 19, Pennsylvania. Immediately after each closing time for receipt of bids, the Authority Board will convene a meeting at the Municipal Building, where bids will be publicly opened and read. Each A Bid Bond or certified check executed by the bidder, payable to the Municipal Authority of the Borough of Baldwin, in an amount equal to Ten Percent (10%) of the bid, shall be submitted with each bid.

Copies of the Contract Documents may be obtained at the offices of the Engineers, 1106 Berger Building, Pittsburgh 19, Pennsylvania.

A deposit of one hundred dollars ($100.00) will be required on each set of Contract Documents taken, (Set No. 1 Contracts I, II, III. Set No. 2 Contracts IV, V, VI), which will be refunded on receipt of a bona fide bid and return of drawings and specifications in good order. Make all checks payable to the Municipal Authority of the Borough of Baldwin. Only fifty dollars ($50.00) will be refunded to those who return the drawings and specifications in good order within thirty (30) days after the last bidding date, but do not submit a formal bid.

The Baldwin Municipal Authority reserves the right to reject any and all Bids.

Dated the 22nd day of January, 1959.

THE MUNICIPAL AUTHORITY OF THE BOROUGH OF BALDWIN
ALLEGHENY COUNTY, PENNSYLVANIA
Emma Bray, Secretary

Bids: February 13, 1959

Contract No. 14

DELAWARE RIVER PORT AUTHORITY
Administration Building
Camden, New Jersey

PAINTING THE WALT WHITMAN BRIDGE OVER THE DELAWARE RIVER CONNECTING PHILADELPHIA, PENNSYLVANIA AND CAMDEN COUNTY, NEW JERSEY

Sealed bids will be received for Painting the Walt Whitman Bridge over the Delaware River connecting Philadelphia, Pennsylvania, and Camden County, New Jersey, known as Contract No. 14 at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey, until 2:00 P. M., Eastern Standard Time, February 13, 1959, at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon the deposit of $10.00 which will be remitted upon the receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified or cashier's check in the sum of $25,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania, or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work. The bidder shall submit along with his proposal a list of successfully completed contracts of comparable size.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
Executive Director

Bids: February 24, 1959

Stream Control Works Contract 460

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Standard Time on Tuesday, February 24, 1959, for Contract 460, for the construction of the stream control works and portions of the release water structures for the proposed Cannonsville dam. The stream control works will consist of an inlet structure, a diversion conduit, about 1250 feet long and 15 feet 6 inches in diameter, with a transition at each end, and a stilling pool. The portions of the release water structures to be constructed under this contract will consist of a portion of the emergency gate tower, the release water conduit and the substructure for the release water chamber. The release water conduit, about 590 feet long, will be a 12-foot diameter steel pipe lined with cement mortar, encased in concrete and constructed on top of the diversion conduit. All work shall be as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of The City of New York, in the amount of one hundred thousand dollars ($100,000.00), for the proper execution of the Contract.

Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in the Secretary's office, Room 1312, at the above address, upon application in person or by mail, by depositing the sum of $5.00 for each pamphlet. Within 30 days following the award of contract or rejection of bids the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of $4.00 will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars apply at the office of the Chief Engineer at the above address.

ARTHUR C. FORD, President. EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply. BETTY COHEN, Acting Secretary.

Bids: March 4, 1959

The Erie Sewer Authority, Erie, Pennsylvania

will receive sealed Proposals for construction of Additions to existing Sewage Treatment Plant until 2:00 P.M. Eastern Standard Time, on the 4th day of March, 1959, at the City Council Chambers, City Hall, Erie, Pennsylvania.

All Proposals received will be publicly opened and read aloud in the City Council Chambers, beginning at 2:00 P.M. EST on the 4th day of March, 1959.

The construction contemplated on the proposed Sewage Treatment Plant Additions is divided for bidding purposes into five separate sections as follows: I—General Construction, Major Equipment and Process Piping. II—Electrical. III—Plumbing. IV—Heating. V—Ventilation.

The Contract Documents including plans and specifications are available for inspection at the office of the City Engineer of the City of Erie.

Copies of documents including plans and specifications for all five sections required for review or bidding purposes may be obtained only from the City Engineer by depositing $50.00 at the office of the City Engineer for each set of documents so obtained. Copies of documents will not be issued after February 25, 1959.

The full amount of the deposit for one set of documents and one-half of the deposit for any additional sets of documents will be refunded to each bidder who submits a formal Proposal to the Erie Sewer Authority.

Equipment manufacturers, subcontractors, and others who do not submit formal Proposals to the Erie Sewer Authority will be refunded one-half the amount of the deposit for all sets of complete documents including plans and specifications returned in good condition to the City Engineer within ten (10) days after the opening of bids.

A certified check, cashier's check, or bank draft drawn on a solvent bank payable without condition to the Erie Sewer Authority, or a satisfactory bid bond executed by the bidder and a surety company, in an amount not less than ten per cent (10%) of the bid, shall be submitted with each Proposal.

No bid shall be withdrawn after the opening of Proposals without the consent of the Erie Sewer Authority for a period of thirty (30) days after the scheduled time of closing bids.

The Erie Sewer Authority reserves the right to reject any or all Proposals and to waive any informalities or irregularities in the bids received or to accept any Proposal on any one section or a combination of sections which is deemed most favorable to the Authority.

Each successful bidder will be required to furnish a satisfactory Performance Bond and Labor and Material Bond in the sum of the full amount of his contract.

The Additions to the Sewage Treatment Plant on which Proposals are requested are briefly described as follows:

The construction on the site of the present Erie Sewage Treatment Plant of a new Digester Overflow Tank, an Addition to the Existing Digester Building, revisions to Existing Digesters, installation of external type digester heating equipment, a Pipe Tunnel connecting the Digesters, new Sludge Collectors for Existing square Primary Settling Tanks, a Grit and Screen Chamber Building, a Steam Generator Building and miscellaneous additions and revisions to structures, piping and equipment.

Plans and Specifications for this project were prepared by Consoer Townsend and Associates, Consulting Engineers, 360 E. Grand Avenue, Chicago 11, Illinois, and 717 Liberty Avenue, Pittsburgh 22, Pennsylvania.

Dated at Erie, Pennsylvania
this 16th day of January, 1959.

ERIE SEWER AUTHORITY
ERIE, PENNSYLVANIA
By Robert A. Stettler
Chief Engineer

OFFICIAL PROPOSALS

Bids: February 17, 1959

Notice is Hereby Given

that sealed proposals for "Preliminary Excavation for Mid-Town Plaza Garage" will be received by the City of Rochester Purchasing Agent at his office, Room 36, City Hall, No. 20 South Fitzhugh Street, Rochester 14, N. Y., until 11 o'clock A.M. Eastern Standard Time on February Seventeenth, 1959, at which place and time they will be publicly opened and read aloud. The proposals shall be for furnishing all material, equipment, and labor for the excavation and filling of disposal materials, in accordance with the Plans, Specifications and other Contract Documents, prepared by Victor Gruen and Associates, Architects-Engineers, for the City of Rochester.

The proposal is divided into two separate contracts, each to include the complete work, as follows:

Stipulated Base Contract. As stipulated in the Contract Documents.

Alternate Base Contract. As stipulated in the Contract Documents, except furnishing sites for and disposal of excavated materials to be the responsibility and at the DISCRETION OF THE CONTRACTOR.

Contractors may submit proposals for either one or both of the Contracts.

These Plans, Specifications and other Contract Documents may be examined at the office of Victor Gruen and Associates, 2 West Thirteenth Street, New York 11, N. Y., and may be examined and copies thereof may be obtained at the office of the Purchasing Agent. One copy of the said documents may be obtained upon payment of $10.00 deposit, any bidder returning such copy in good condition within thirty (30) days following the opening of proposals will be refunded $10.00 and any non-bidder so returning such copy will be refunded $5.00.

The City of Rochester reserves the right to reject any or all proposals, and to waive any informalities, should the best interest of the City thereby be promoted.

Proposals shall be made on the form provided in the Contract Documents, and each proposal shall be accompanied by a certified check made payable to the City of Rochester, N. Y., in an amount not less than five per cent (5%) of the total amount of the proposal, conditioned that the bidder will execute the Contract and deliver the required Performance Bond for the proposed work within ten (10) calendar days after the date of written notice that his proposal has been accepted. For proposals with total amounts in excess of $200,000, a bid bond in the amount of five (5) per cent of the amount of the proposal, in proper form, executed by a surety company acceptable to the City, will be accepted in lieu of the aforesaid certified check.

A bidder may not withdraw his proposal within forty-five (45) calendar days after the opening of proposals, but may withdraw his proposal at any time prior to the scheduled time for the opening of proposals.

Kenneth E. Punnett
Purchasing Agent
City of Rochester, N. Y.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3150) will be received at Lewiston, California, until 2 p.m., Pacific Standard Time, March 5, 1959, for furnishing labor and materials for earthwork, structures, and surfacing relocation of Trinity County road, Ridgeville to Covington Mill, California, Central Valley Project. Location near Redding, California, in Trinity County. Principal items are 670,000 cu. yds. excavation, 6,200 lin. ft. corrugated metal pipe, 63,000 tons crushed rock base, and other work. Completion time 525 days. For particulars, address Bureau of Reclamation, P. O. Box 247, Lewiston, California, or Building 53, Denver Federal Center, Denver 25, Colorado. W. A. Dexheimer, Commissioner.

ADDITIONAL OFFICIAL PROPOSAL ADVERTISING

Continued on page 98

OFFICIAL PROPOSALS

Bids: March 3, 1959

Contract PN-560.005

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
BUILDINGS 261, 262, 263 AND 264
PAVING AND UTILITIES

Sealed proposals for the construction of pavement, utilities and tracks for Buildings Nos. 261, 262, 263 and 264 at Port Newark will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, March 3, 1959, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 5, 1959

OFFICIAL PROPOSALS

Bids: March 3, 1959.

Contract BP-140.014

THE PORT OF NEW YORK AUTHORITY
BROOKLYN-PORT AUTHORITY PIERS
PIER 2
STEVEDORE'S GARAGE

Sealed proposals for the construction of a stevedore's garage in the vicinity of Pier 2 at the Brooklyn-Port Authority Piers will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, March 3, 1959, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 5, 1959

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication, Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Wanted: Chief Estimator. Judicious Buyer. Graduate Civil Engineer. Proven Ability. Willing to assume responsibility. Salary and participation. Send Complete resume, salary expected. Executive Offices, Delaware Valley. P-9647, Engineering News-Record.

Estimator—General Contractor—Experienced Commercial, Industrial Buildings—Locate in Jacksonville, Florida—Send resume stating experience and salary requirements. P-9684, Engineering News-Record.

Civil Engineer—Registered professional engineer with experience in municipal street and sewer design. Beginning annual salary approximately $7075.00 with increase at the end of the first six months. Annual 5% increase each year for the next three years to a final annual salary after three and one half years of approximately $8410.00. Normal fringe benefits. Submit resume and references to Director of Public Service, City of Middletown, Ohio, P. O. Box 530.

Chief Estimator: experienced in heavy and highway construction. Immediate and permanent position available with medium sized progressive organization located in middle West. P-9717, Engineering News-Record.

Design Engineers: Graduate Civil Engineers to do detailed design work involving street paving, storm sewer and sanitary sewer projects. Sanitary Sewer projects to be given major emphasis. Application Should Be Made, Giving Minimum Salary, to Department of Personnel, Springfield, Missouri.

Civil Engineer Wanted By Western Illinois County, for survey, design, and construction of county highways. Under graduates with experience considered. Permanent with automatic advancement, paid vacation, sick leave, holidays, excellent retirement. State education, background, experience and salary desired. P-9712, Engineering News-Record.

Chief Tunnel Inspector—Minimum of 10 years experience on large tunnel projects. Must assume full responsibility for the inspection of a large tunnel drain project. Send complete resume to Daniel W. Barry, Oakland County Drain Commissioner, 550 S. Telegraph Road, Pontiac, Michigan.

• POSITIONS VACANT

Experienced Estimator for firm engaged in general construction of commercial and industrial buildings. Pleasant Central Pennsylvania city. Permanent position, salary commensurate with experience and ability; good opportunity for right man. Send complete resume to P-9779, Engineering News-Record.

Wanted: Concrete Paving Foreman. At least 5 years experience in highway or airport paving. Location—Ohio. P-9691, Engineering News-Record.

Estimator—Superintendent for concrete paving operations. Excellent opportunity for permanent position with aggressive, rapidly expanding organization. Must be capable of assuming complete responsibility. Salary and percentage. P-9746, Eng. News-Record.

Construction Estimator-Analyst And Appraiser to manage professional surveying office in Chicago. Full knowledge of this business essential. Under age 35. P-9884, Engineering News-Record.

Experienced Structural Steel Detailers for Small Steel Fabricator in Middle Georgia Area. Member Company AISC. Send Resume of Experience. P-9877, Engineering News-Record.

Have opening for several recent Civil Engineer Graduates with military obligations completed who desire to learn the construction business. Ambitious, aggressive, dependable, use no intoxicants, willing to start in the field on industrial buildings and heavy construction, and willing to move. Must be single. We operate throughout Kansas and adjacent states; offer excellent opportunity for advancement. Top wages. Martin K. Eby Construction Co., Inc., P. O. Box 1679, Wichita, Kansas.

Wanted M.S. structural engineer to take responsibility for design of variable indeterminate structures. Permanent position in a well established firm. Excellent living conditions. Future association for properly qualified person. Location: North Carolina. P-9850, Engineering News-Record.

• EMPLOYMENT SERVICE

Salaried Personnel $5.000-$30.000. This nationwide service successful since 1927 finds openings in your field. Sells your abilities; arrange contacts. Present position protected. Write for detail—Jira Thayer Jennings, P. O. Box 671, Manchester, Vermont.

(Continued on opposite page)

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

DISPLAYED RATE:

The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

FEBRUARY 19TH ISSUE CLOSES FEBRUARY 9TH

UNDISPLAYED RATE:

$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take 1/2 of above rate.

Box numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to agency Commission.

Send NEW Ads and Inquiries to Classified Advertising Division or ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

• POSITIONS WANTED
(Continued from opposite page)

Superintendent-Estimator—Piping & Mechanical Specialist 18 Yeras Refinery, Powerhouse, Steel Mill, Etc. All Phases Estimate To Completion. Resume On Request. PW-9699, Engineering News-Record.

Danish Civil Engineer. M.S., ASCE. Associate Professor, age 31, 8 years experience in design of reinforced and prestressed concrete, seeks position in Europe, July 59. PW-9762, Engineering News-Record.

Safety Director. 18 years experience in all types construction. Interested in permanent position. Free to relocate on reasonable notice. PW-9800, Engineering News-Record.

General Superintendent. 31, with carpentry background, able to organize and administer complete project from bid to completion, desires position with aggressive Chicago area contractor. PW-8781, Eng. News-Record.

Ambitious Engineer. 33. Civil Graduate, speaks Spanish, French. Seeks challenging job with future. Twelve years experience building and refinery construction, sales, top administration, missiles, foreign and domestic. Currently on West Coast but will relocate for right job. Citizen. PW-9801, Engineering News-Record.

Foreign Position Wanted. Executive and supervisory construction experience United States and South America. Mass housing, roads, utilities, general construction, production of lumber, concrete blocks, clay products and aggregate. Excellent record as cost conscious producer and ability to deal with all classes of people. PW-9812, Engineering News-Record.

Office Manager-Accountant Main or Field office domestic or foreign. Heavy Const. taxes, payroll cost, timekeeping, Purchasing Insurance Personnel. PW-9769, Engineering News-Record.

Construction Executive, age 38. Managed successful heavy construction company for 12 years. Estimating—Organizing—Completing. Experienced in complete management. Considerable experience negotiating with various authorities for extras, claims, etc. Cash flows prepared to anticipate financial requirements. Desire financial assistance to operate new entity or profit sharing arrangement with operating company. Have immediate profitable ventures to offer. Prefer Philadelphia area but will consider changing residence. PW-9221, Eng. News-Record.

Construction or Gen. Supt. 25 years experience in industrial, bridge, water and sewerage plant construction. Presently living in Ohio. Will relocate. Resume available. PW-9703, Engineering News-Record.

Construction Supt. Sewer and Water Lines— 23 years experience—can get job done, and make money. PW-9766, Eng. News-Record.

DON'T FORGET

the box number when answering advertisements. It is the only way we can identify the advertiser to whom you are writing.

• POSITIONS WANTED

Electrical Construction Superintendent. 46. 28 yrs. experience. 5 yrs. field engineer and design. Heavy, industrial, power house and substation. Complete job, material take-off, expediting, negotiations to final sale. PW-9806, Engineering News-Record.

Construction Supt. General Construction. PW-8896, Engineering News-Record.

Project Manager Foreign Heavy Construction. Graduate Professional Engineer with extensive experience Latin America, available for long or short assignment or consultation. PW-9749, Engineering News-Record.

General Supt. 40 years old. 18 yrs. as supt. last 8 yrs. as general supt. heavy, highway and airport construction. Qualified references. Available March 1st. PW-9709, Engineering News-Record.

Equipment Superintendent for all types of earthmoving equipment. Thoroughly experienced in preventive maintenance, purchasing and labor relations. Age 35 will relocate. Excellent references. PW-9678, Engineering News-Record.

Estimator—32 yrs. BSCE, desires challenging position with gen'l contractor in heavy industrial and commercial construction. PW-9772, Engineering News-Record.

Architectural Eng., 29. B.S.A.E., Professional Eng. 2 yrs. diversified exp. 4 yrs. exp. in architectural and structural design of industrial buildings. One yr. responsible charge of work. Salary and location open. PW-9887, Engineering News-Record.

Shovel, Dragline and Crane Operator; 24 Years Exp. in all phases of Highway Construction, and other Earthmoving projects. Can repair and rebuild any make machine. Desire position as supervisor or will operate. PW-9873, Engineering News-Record.

Executive, production-minded, experienced graduate CE, available interesting challenging job. PW-9876, Engineering News-Record.

Construction supervisor now in Japan desires contact to continue overseas employment. Any area. Long experience in steam generating, petroleum refining, chemical and other heavy industrial construction. Particularly capable in piping, instrumentation, electrical. Experienced overseas employment. Excellent references. PW-9880, Engineering News-Record.

Sanitary Engineer—24—Single—MS in Sanitary Engineering—Two years experience with consulting firms—Will consider all offers especially overseas—Available about April 1, 1959. PW-9881, Engineering News-Record.

Graduate Civil Engineer 25, married, experienced in stress analysis, soil mechanics, slope stability, depth of fill investigations, fill compaction and highway construction. Prefers permanent position in West or Mid-west. Will consider foreign assignment. PW-9862, Engineering News-Record.

Construction Manager—BSCE—Proven organization and production abilities. Wide experience in heavy construction. Qualified to assume full responsibility. Location, Northern California. Minimum $16,000. PW-9826, Engineering News-Record.

Construction Superintendent or director qualified. 25 yrs. experience. G.M.C. Lucas, 2225 Wisteria, Sarasota, Florida. Ph. RI 79843.

Civil Engineer, 41, 20 yrs. qualified, 8 recently on highways in tropics as resident engineer, seeks highway design work in U.S.A. or overseas work with U.S. firm. Now working a year in Canada. PW-9861, Engineering News-Record.

SALES ENGINEERS

Heavy Hardware Concern mfg. material used in construction of Piers, Bridges, Roads, Sewers and Industrial Buildings, requires services of Sales Engineers for several territories covering Eastern Seaboard and Gulf States. Applicants must have car and experience in dealing with Heavy Construction Contractors, Engineers and Specifiers. The offered positions are steady with advancement opportunities. Salaries and/or other benefits open. APPLY IN WRITING ONLY stating age, experience, references and all personal data which will be kept in strict confidence. Address

JERSEY BOLT & SPIKE CORP.
P. O. Box 5103, Newark 5, N. J.

RESIDENT ENGINEER

To supervise construction of 122 kilometer highway in Iraq. Fifteen years experience required. Excellent salary plus furnished house free for self and family. Approximately two to two and one half years term. Please send complete resume and specify salary required.

HARZA ENGINEERING COMPANY
400 W. Madison St., Chicago 6

• POSITIONS WANTED

Construction executive, age 43, family man. Presently employed as General Manager at $250 per week plus incentive. Same top capacity since age 21, non-graduate no handicap. Engaged primarily in construction of highways with allied construction of pipelines, dredging, oilfields etc. Background also includes railroads, dams, bases, personal representative for international architect and engineer, organization of subsidiary for owners and liaison representative for investment combine. No design. Desirous of permanent relocation southeastern U.S., or consider change of field or foreign with family. Personal interview at convenience of principals. PW-9864, Engineering News-Record.

Construction Superintendent 23 years diversified experience in commercial and industrial buildings, sewage plants, water works, sewer and water lines, and bridges, experience includes job management, preparing estimates, purchasing, engineering, and sub contracts presently employed, desire change. Resume on request. Age 43. PW-9863, Engineering News-Record.

Superintendent—Pile Driving thoroughly experienced in all phases, cost concious. Print reading. Job estimating. Available immediately. References. PW-9818, Engineering News-Record.

Construction Supt.—10 yrs. experience Concrete paving. Toll and state highways PW-9875, Engineering News-Record.

Construction Executive—presently in executive capacity, Licensed Professional Engineer, 22 years experience in all phases of construction and job management, purchasing, sub-contracting, processing of government claims. Desires connection with possible future participation. PW-9830, Engineering News-Record.

ENGINEERS

PERMANENT OPENINGS FOR QUALIFIED MEN EXPERIENCED IN THE DESIGN OR SPECIFICATIONS FOR

AIRPORTS
BRIDGES
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PREFER GRADUATE REGISTERED ENGINEERS WHO SEEK LONG RANGE EMPLOYMENT WITH AMPLE OPPORTUNITY FOR PROFESSIONAL DEVELOPMENT AND ADVANCEMENT IN A STEADILY EXPANDING AND GROWING ORGANIZATION.

Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross Moving allowance.

Work will be in the general offices in St. Louis. Interviews can be arranged in Washington, D. C., and San Francisco also.

Please write fully, including salary data, to

SVERDRUP & PARCEL ENGINEERING CO.
ENGINEERS — ARCHITECTS
915 Olive St. Louis 1, Mo.

WANTED
APPLICATIONS FROM
ENGINEERING
PERSONNEL

HIGHWAYS
BRIDGES
ARCHITECTURAL

Openings in Pennsylvania, Ohio, Maryland, West Virginia & Mississippi

DESIGNERS
DRAFTSMEN
FIELD ENGINEERS
INSPECTORS
CHIEFS OF PARTY
INSTRUMENTMEN

Career opportunities for individuals interested in professional recognition, ample opportunity for advancement based on merit, plus employee retirement plan, group life insurance, hospitalization, paid vacation and holidays.

EXPERIENCE REQUIRED
Mail Resume to Personnel Department

MICHAEL BAKER, JR., INC.
CONSULTING ENGINEERS

Baker Building
Rochester, Pennsylvania
or
Northside Station, Box 9997
Jackson 6, Mississippi

Employment Opportunity

Nationally known midwest testing and research organization has openings for unusual personnel as follows:

1. **Bituminous Engineer**—experienced in mix design, inspection and control of construction with extensive laboratory experience and research accomplishments. The number and context of published work is extremely important.

2. **Concrete Engineer**—experienced in mix design, inspection and control of regular and lightweight concrete for normal and prestressed members. Must also have thorough knowledge of chemistry of cements and geology including ability to make petrographic studies. Research experience and publications important.

3. **Laboratory Chief Technician**—must be fast and accurate on all tests required on construction materials. Thorough understanding of test methods in soils, concrete and asphalt including ability to design and build test apparatus required for special research problems.

• • • •

Your present position will be protected. Send complete resumé, including snapshot and salary requirements.

P-9738, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

BRIDGE DESIGN ENGINEERS

Benefits

Company pays hospital insurance, including dependents, vacations. Profit-sharing-retirement plan, life insurance. Low personnel turnover. Salary advancement periodically with your advancement in ability.

CHAS. W. COLE & SON

3600 E. Jefferson **South Bend, Ind.**

CHIEF ESTIMATOR

TOP QUALITY MAN WANTED TO ASSUME FULL RESPONSIBILITY OF ESTIMATING, EXPEDITING, AND RELATED WORK FOR LARGE AND GROWING CHICAGO AREA GENERAL CONTRACTOR. Salary open. Send complete resume: education, experience in office and field, types and sizes of projects handled.

P-9741 Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

An employment advertisement in this EMPLOYMENT OPPORTUNITIES section will help you find the engineers you need. It's an inexpensive, time-saving method of selecting competent personnel for every engineering job.

ESTIMATOR

Expanding construction firm interested in employing an estimator with experience and background in diversified estimating. Will qualify him for immediate position as Assistant to Chief Estimator. Civil Engineer graduate preferred. Our company provides many benefits for the right person.

ROSCOE-AJAX CONSTRUCTION CO., INC.
1107 - 19th St., N.W., Washington, D. C.

SEARCHLIGHT SECTION

CLASSIFIED ADVERTISING

BUSINESS OPPORTUNITIES - EQUIPMENT - USED or RESALE

DISPLAYED RATES

The advertising rate is $25.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured 7/8 inch vert. on one col., 3 columns—30 in. to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

UNDISPLAYED RATES

$2.40 a line, min. 3 lines. To figure advance payment count 5 average words as a line.

BOX NUMBERS count as one additional line in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

WANTED

HORIZONTAL SEWAGE PUMP

To handle sanitary sewage without clogging. Must have capacity of at least 3,000 G.P.M. at 60 foot head. Need pump only. Will consider pump and motor combination. Reply all details to:

PARKERSBURG SANITARY BOARD
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OFFICIAL PROPOSALS

(Continued from page 90)

Bids: March 2, 1959.

Notice to Contractors
Township of North Brunswick
Middlesex County, New Jersey

Sealed bids for general construction of the Mile Run and Livingston Avenue Interceptor Sewers and appurtenances and the Livingston Avenue Pumping Station under Contract 1 and for the electrical construction of the Livingston Avenue Pumping Station and three meter chambers under Contract 2 will be received by the Township of North Brunswick at the Linwood School, Linwood Place, until 8:00 P.M., prevailing time, March 2, 1959, and then, at said school, publicly opened and read aloud.

Contract 1 includes laying 851 linear feet of 18 inch reinforced concrete sewer pipe, 7,347 linear feet of 36 inch asbestos-cement sewer pipe, 6,709 linear feet of 24 inch asbestos sewer pipe, miscellaneous connections, three meter chambers and other appurtenances and the Livingston Avenue Pumping Station.

Contract 2 includes a complete electrical system for the Livingston Avenue Pumping Station and three meter chambers.

The Information for Bidders, Proposal, Bid Bond, Contract Agreement, Contract Bond and Plans and Specifications may be examined at the office of the Clerk, Municipal Building, Township of North Brunswick, and at the office of Charles J. Kupper, Consulting Engineer, 15 Stelton Road, New Market, New Jersey, and copies thereof obtained at said office of Charles J. Kupper, Consulting Engineer, upon payment of $25.00 for each set, which amount will not be refunded.

The Township of North Brunswick reserves the right to waive any informalities in or to reject any or all bids.

Each bidder must deposit a bid security of 10% of the base bid in the form of a certified check, bid bond or cash.

No bidder may withdraw his bid within 60 days after the actual date of the opening thereof.

Gerald Beaudette
Township Clerk

Dated: February 2, 1959

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5148) will be received at McCook, Nebraska, until 10 a.m., Central Standard Time, March 12, 1959, for furnishing labor and materials for earthwork and structures, Culbertson Canal, Station 300+60 to Station 1126+00, and laterals, Frenchman-Cambridge Division, Nebraska, Missouri River Basin Project. Location northwest of Culbertson, Nebraska. Principal items are 1,500,000 cu. yds. excavation; 1,430 cu. yds. concrete in structures; 274 mbm timber in structures; 3,146 lin. ft. concrete pipe; and other work. Completion time 700 days. For particulars, address Bureau of Reclamation, P. O. Box 737, McCook, Nebraska; or Building 53, Denver Federal Center, Denver 25, Colorado. W. A. Dexheimer, Commissioner.

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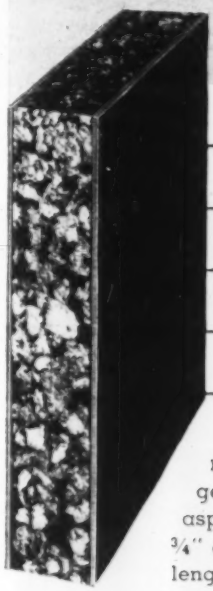

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Reducing Flood Damage

THE NATION'S PRESENT ANNUAL BILL for flood damage averages just over $700 million. It is an amount that might be cut by almost two-thirds if all feasible flood control works were constructed. The bill for such works could add up to over $13 billion. And floods would remain a threat.

It is a vast problem, and one that will never be completely solved. Floods have a history that goes back perhaps to Noah's Ark; and they have a future that will extend to the end of time. A certain amount of flood damage must be considered an irreducible minimum. This uncontrollable damage, in fact, would average some $230 million worth annually (at 1957 prices) according to Corps of Engineer calculations of the situation (see p. 22).

But the enormity of the problem should not faze those concerned with its solution; the fact that complete flood control is beyond reach ought not deter them from feasible steps toward the economic ultimate in protection against floods.

The authorized projects need to be built, and probably at a faster rate than the present approximate $300 million worth a year. All feasible flood control projects ought to be identified and authorized for construction as early as possible. Upstream control measures ought to have consideration along with the larger constructed works.

Meanwhile, the flood plains of rivers ought to be zoned against further encroachment of homes and industry. And finally, for those not fully free of flood risk, the economic blow of possible flood damage should be softened by establishment of a workable scheme of flood insurance.

The challenge of reducing losses due to floods is as great as the job yet to be done. The potential benefits make it so.

Controlling Noise by Design

BEYOND A DOUBT, noise in modern buildings is not just a nuisance, but a cost generated by such things as lost time due to distractions, absenteeism and even workmen's compensation for hearing disability, and since cutting down noise would reduce these costs, noise control becomes a new and profitable service that building designers can render.

The Building Research Institute Conference on Noise Control did a splendid job in calling attention to this and in summarizing experience in the field (ENR Jan. 22, p. 29). Acoustic experts at the conference also offered these thought provoking observations:

- There is more noise inside buildings today than formerly because of increased use of machinery.
- Noise enters new buildings more easily and spreads with less hindrance because of lighter, thinner walls and floors and fewer and lower partitions.
- Noise control should begin when the building is in the planning stage.
- Acoustic specialists are useful, but common sense and a knowledge of basic acoustic principles can solve many noise problems.
- Machinery makers could be helpful by designing their machines to be more quiet; also by providing information on proper mounting of equipment and on the sound ratings of their machines.
- More research is needed to determine how to decrease noise from plumbing.
- "Acoustic perfume," i.e. low, steady background noise, is a useful means of disguising certain annoying sounds.

The road is now open; noise control can be treated as an integral part of the design of a building just as, say, weatherproofing is now.

Men Who Love Construction

THE MOLES, that respected and exclusive club of heavy constructors, served up its annual helping of sentiment at last week's Awards Dinner in New York. Howard Collins, president and toastmaster, excused himself for "hamming up" the proceedings with personal nostalgia. But he wasn't out of order. The whole function is an emotional stimulant—and a healthy one—for construction men who attend.

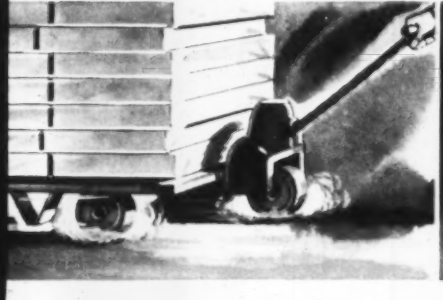
There is the Waldorf Astoria ballroom, full of Moles and their guests, resplendent in black ties and looking—many of them—as if they'd be more comfortable in hard hats. On stage, there is the huge, horseshoe-shaped dais, its honored guests with names such as Atkinson, Kiewit, Morrison, Perini, Steers and Walsh—to cite just a few. An atmosphere of camaraderie pervades the place as men, who through the year may have competed keenly for business, mingle at ease and for pleasure as at a college reunion.

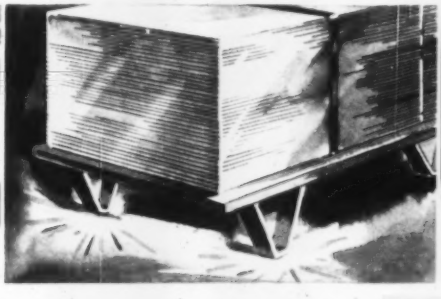
Into this atmosphere, heavy with good fellowship, go the comments of awards presentation and acceptance—Moles confessing unashamedly their love for the construction business, their affection for one another. They talk of themselves as adventurers, optimists; restless, resourceful. And one, the revered Lou Perini, submits that when it comes to cementing U.S. relations abroad, "he who wears the hard hat has done more than the man in the high silk hat and striped pants."

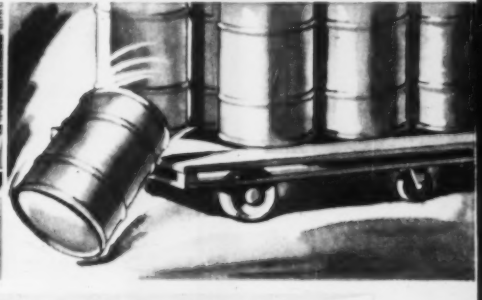
The brief speeches end, but long conversations go on—construction talk. And when it's all over, it is a stimulated group that splits up to go back to the many construction jobs in field and office. And indeed it is a fortunate construction industry that has dedicated men such as these—the Moles and their friends—who love construction.

will your floors be SHATTERPROOF?

No concrete floor surface provides an absolutely true plane. Even minor irregularities intensify impact, causing a continual hammering action.







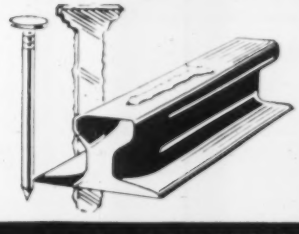
Hard aggregates do not necessarily make long-life floors. Many aggregates—even traprock, granite and emery—are unfortunately brittle. Impact from truck wheels, pallets and skids, and falling objects can shatter these brittle materials, produce ravelling, and start a chain of costly floor maintenance.

Masterplate metallic aggregate is tough yet ductile. The scientifically graded iron particles cushion impact, prevent ravelling and provide the highest abrasion resistance*.

Many million square feet of Masterplate floors are in use today and giving excellent service. Masterplate floors are virtually non-absorbent, oil proof and resistant to many corrosives found in industry.

Full information on Masterplate and "see-for-yourself" demonstration kit on request.

*In U. S. National Bureau of Standards Tests the Masterplate type floor had 6 times greater resistance to wear than the best plain concrete floor.



Basic principle of MASTERPLATE

You know what happens to a nail on the railroad track—it doesn't fracture or crumble; it merely flattens, retaining the same general shape. This is the basic principle of Masterplate. Because of its ductility, Masterplate, unlike brittle material, "gives" under impact, producing a floor with great wear resistance.

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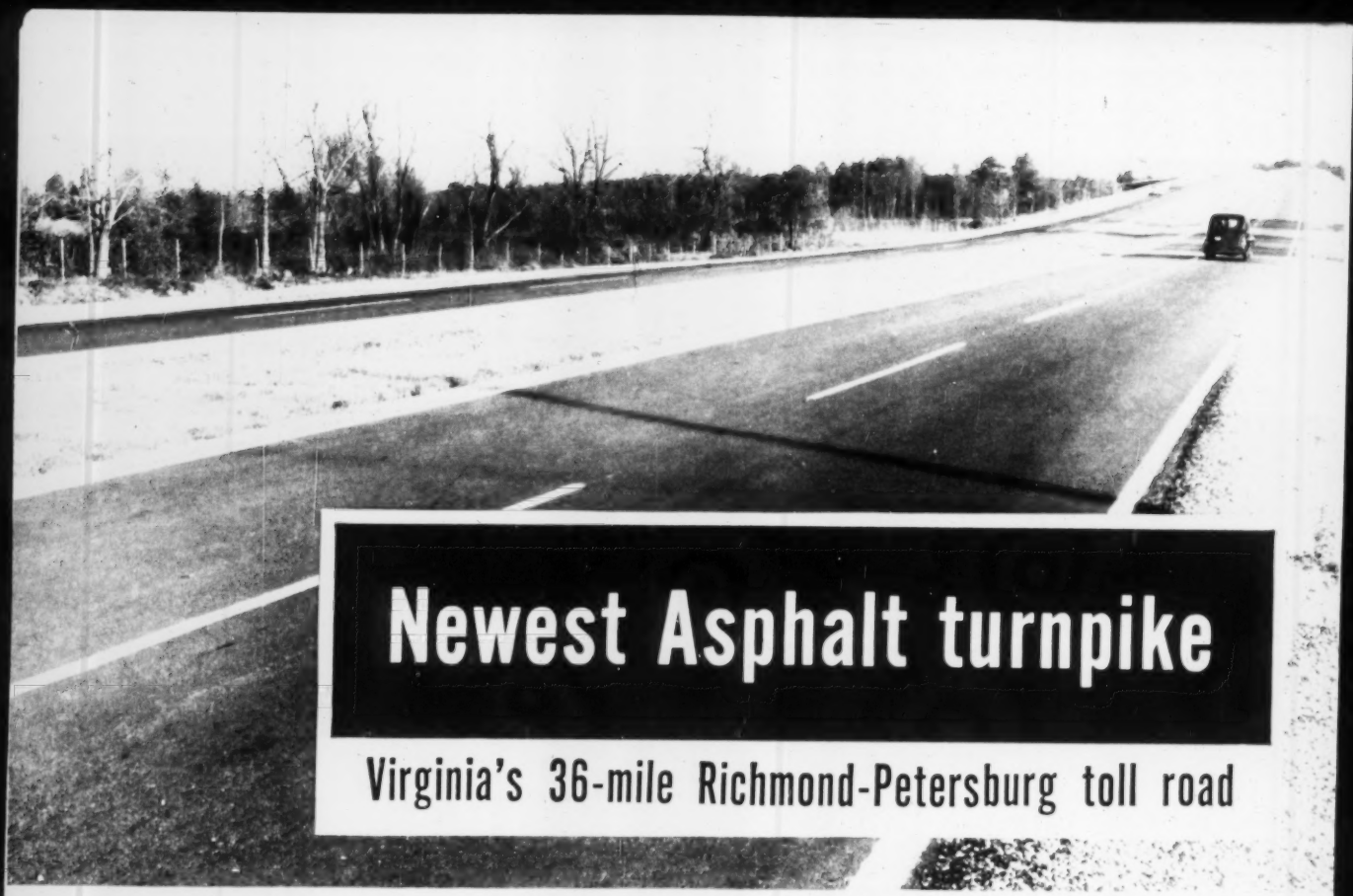
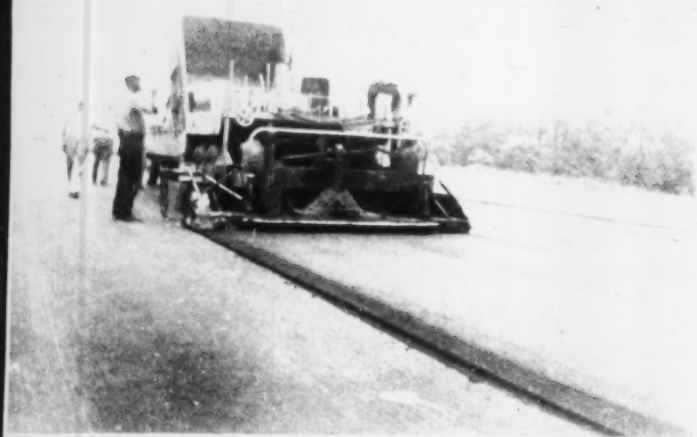


Newest Asphalt turnpike

Virginia's 36-mile Richmond-Petersburg toll road



View of 1.8 mile section at south end of turnpike. Texaco Asphaltic Concrete, laid in five courses, provides a 9½ inch foundation and wearing surface.
Contractors—Villa Contracting Company, Westfield, N. J. and Short Paving Company, Inc., Petersburg, Va.

Virginia's newly completed turnpike represents another important link in the Interstate Highway System. It is part of Interstate Route 95.

From Richmond to Petersburg, this major traffic artery has a heavy-duty, flexible Asphalt pavement. Competitive bids were received on Asphalt and rigid pavement of comparable design for sections of this toll road. As a result, Asphalt again demonstrated its lower cost and the substantial saving it makes possible in the construction of Interstate Highways, toll roads and other main traffic arteries.

Briefly, the Virginia toll road's pavement consists of a 2-inch wearing surface of fine aggregate, plant-mixed Asphaltic Concrete; a 7½-inch base of coarse aggregate, plant-mixed Asphaltic Concrete laid in three courses; and an 11-inch subbase of select borrow material.

Helpful information on the type of Asphalt pavement constructed on the Richmond-Petersburg Turnpike, as well as other Asphalt types, is supplied in the brochure, "Plant-mixed Texaco Asphalt Paving". Write our nearest office for a copy.

THE TEXAS COMPANY, Asphalt Sales Div., 135 E. 42nd Street, New York 17

Boston 16 (20 Providence St.) • Chicago 1 (332 So. Michigan Ave.) • Houston 1 (720 San Jacinto St.)
Jacksonville 1 (P.O. Box 749) • Denver 1 (P.O. Box 2100) • Philadelphia 2 (1411 Walnut St.)
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